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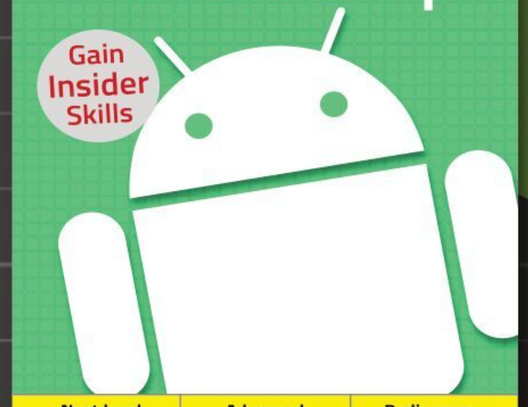

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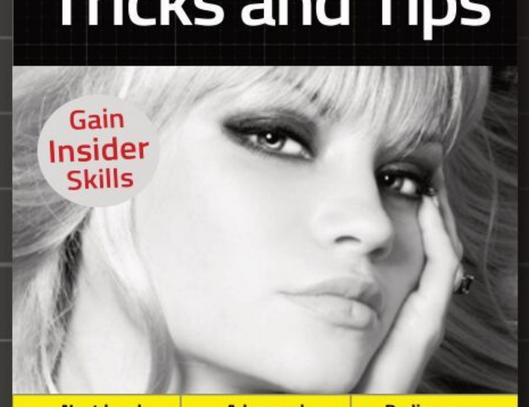

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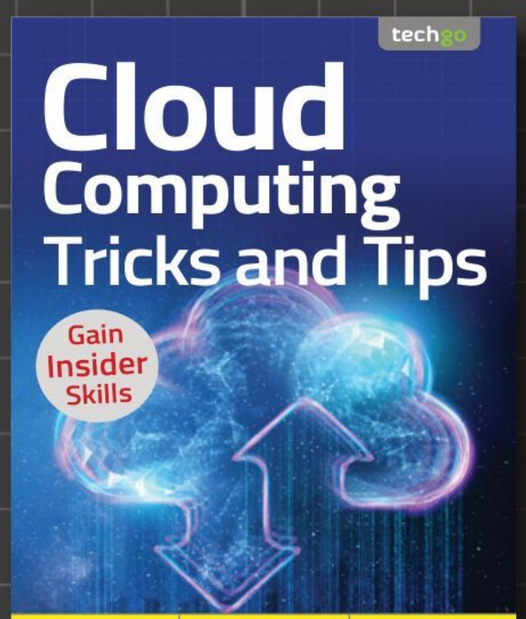

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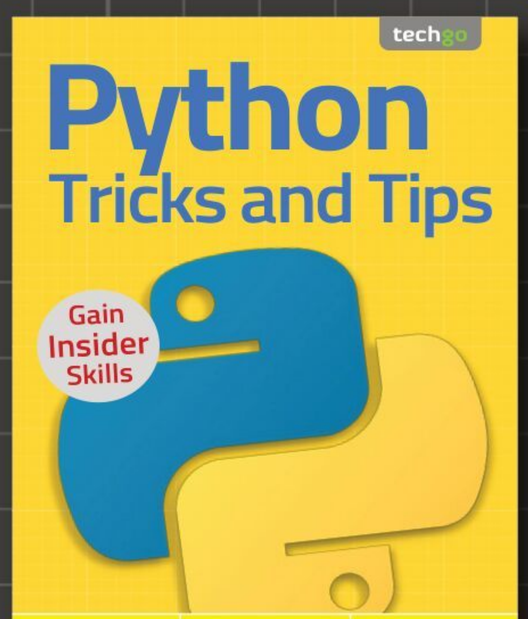

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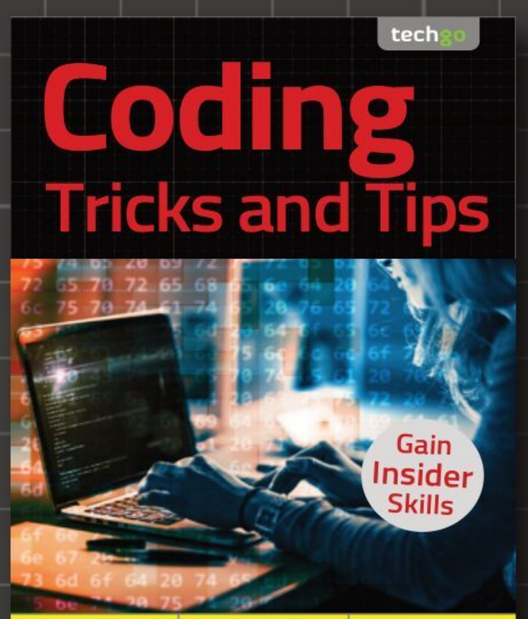

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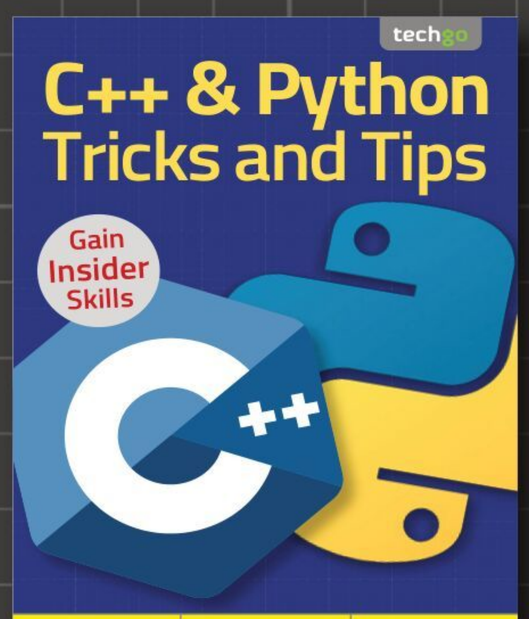

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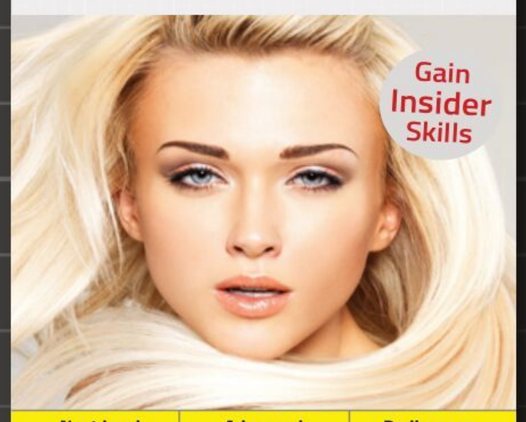

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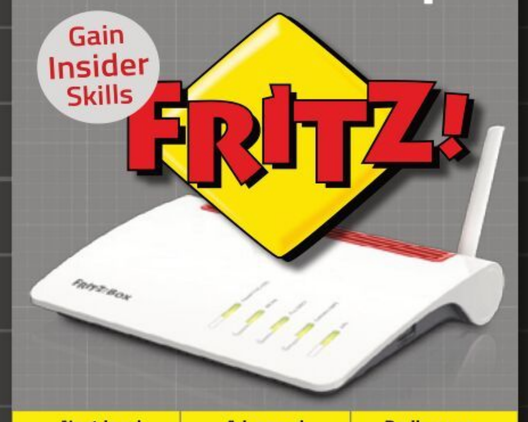

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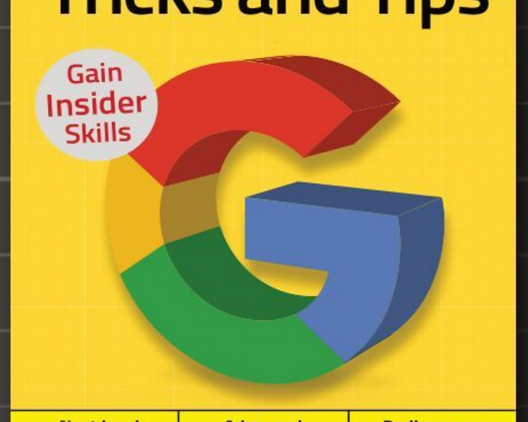

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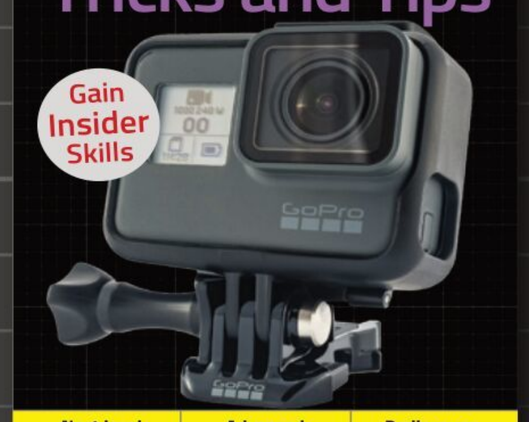

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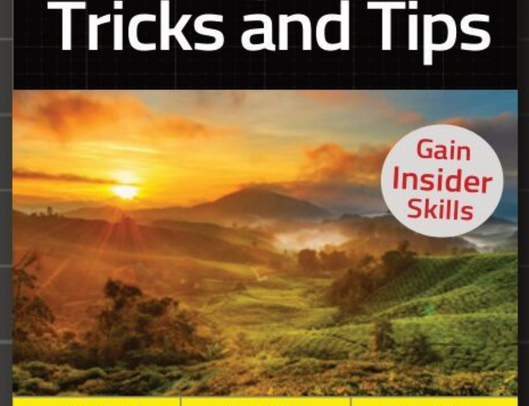

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Android

Tricks and Tips

Welcome back... Having completed our exclusive For Beginners digital guidebook, we have taught you all you need to master the basics of your new device, software or hobby.

Yet that's just the start!

Advancing your skill set is the goal of all users of consumer technology and our team of long term industry experts will help you achieve exactly that. Over this extensive series of titles we will be looking in greater depth at how you make the absolute most from the latest consumer electronics, software, hobbies and trends!

We will guide you step-by-step through using all the advanced aspects of the technology that you may have been previously apprehensive at attempting. Let our expert guide help you build your understanding of technology and gain the skills to take you from a confident user to an experienced expert.

Over the page our journey continues, and we will be with you at every stage to advise, inform and ultimately inspire you to go further.

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THE ULTIMATE GUIDE TO FACEBOOK

Packed with tips and advice, learn how to get the most from the Facebook app on your Android smartphone or tablet and instantly become more socially aware.

40

USING ANDROID PAY

Make cashless payments even easier. Learn how to set up and use the contactless Android Pay system and find out more about how Google keeps you secure.

70

COMMON ANDROID PROBLEMS SOLVED

Identify and fix the most common problems encountered on mobile devices, from slow apps to lack of storage space. If you are having problems, this is where to look.

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"...solving common problems and on to learning about adding launchers and rooting your device. We will show you how to explore the OS and get more from any Android phone or tablet..."

Android Tricks and Tips

4th Edition

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EXPLORING ANDROID

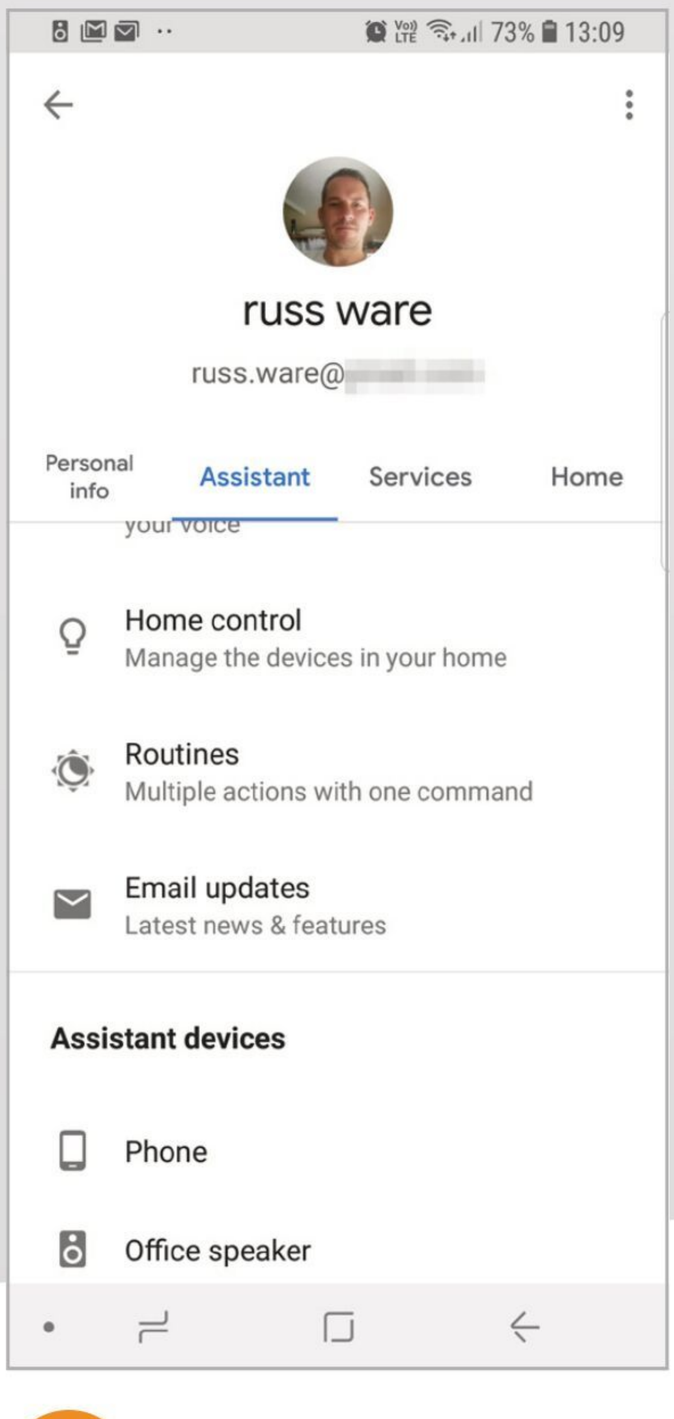
From using new Android features like Allo, Duo and Google Assistant to planning a journey and making the most of every photo taken on your phone, this section is all about getting more from Android and some of the variety of apps, tools and features it offers to users prepared to explore.

Google Home Routines

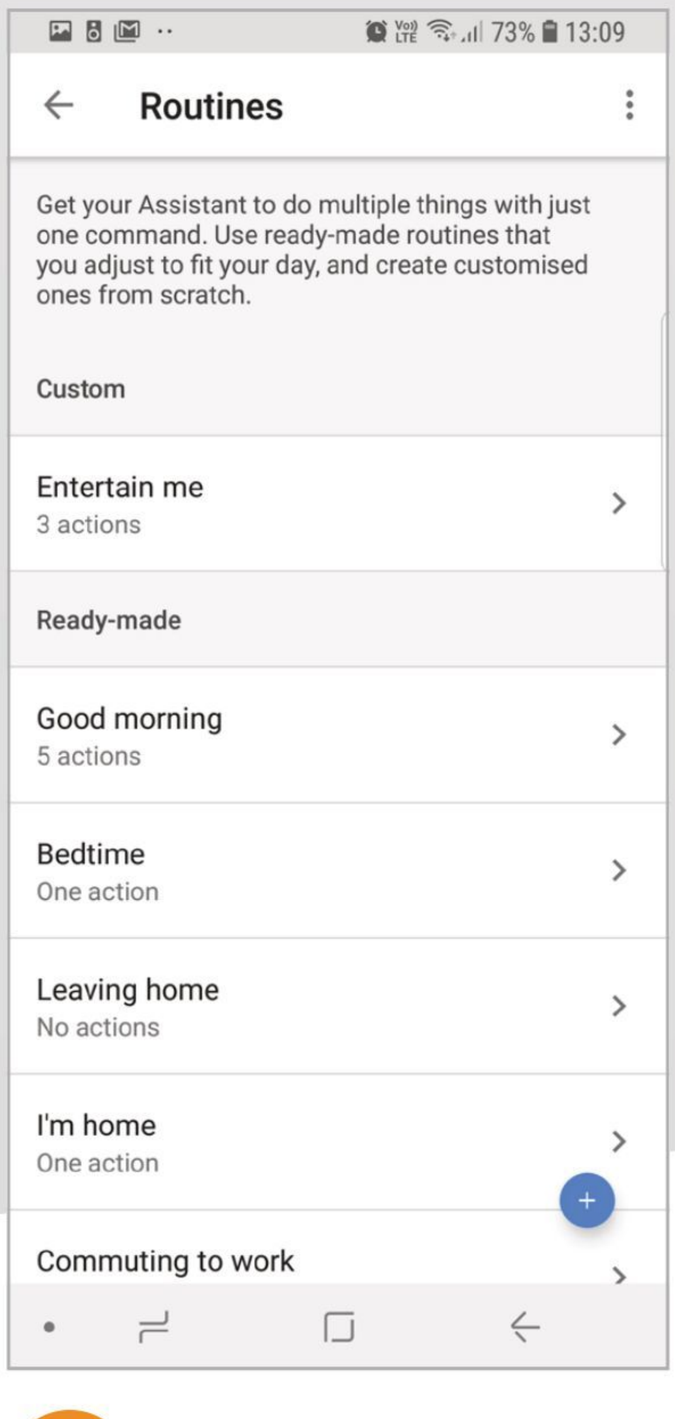
Routines are a set of actions that your Google Home can perform when activated by a single voice command. You can customise existing pre-set routines in the Google Home app, or you can create your own personalised routines from scratch, using a wide variety of available actions.

Create and Manage Routines

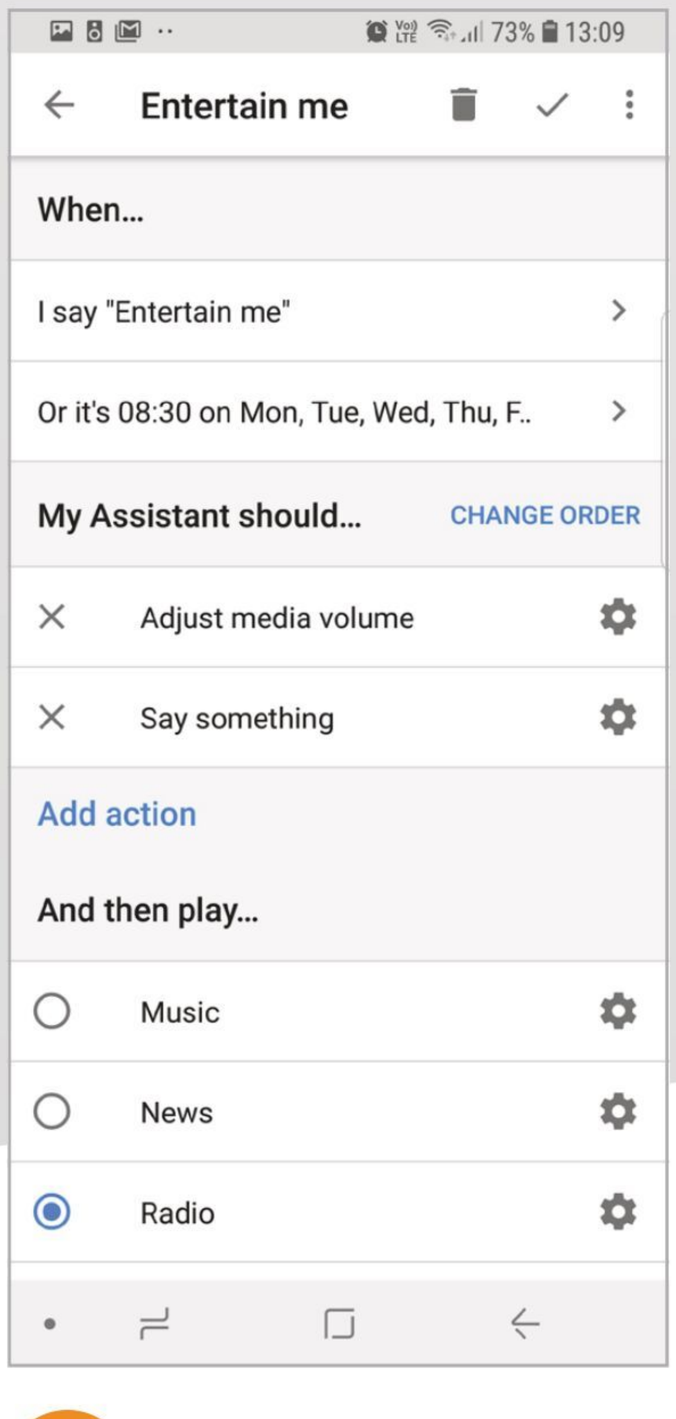
Learn how to customise, create and use Routines with your Google Home speaker and the Google Home app on your mobile device.



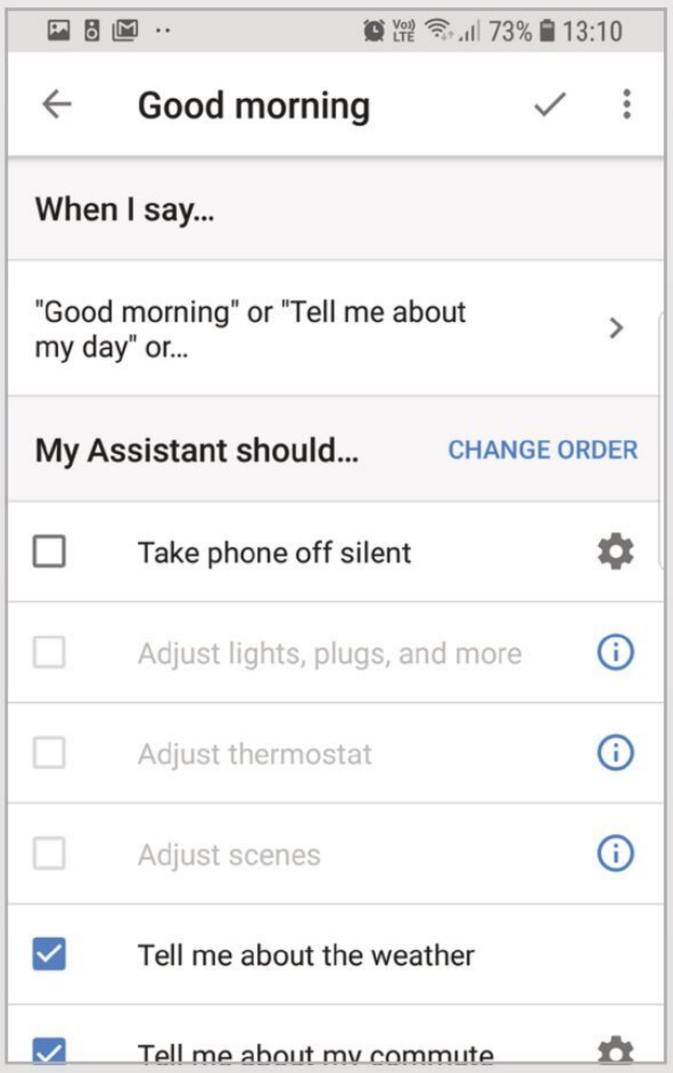
1 Your Google Home app comes with several pre-set routines. To view or edit these, tap the Menu button at the top left, and select “More settings”. Scroll down and tap the “Routines” section. Here you will see displayed all of the existing routines, for example “Good morning” or “Bedtime”.



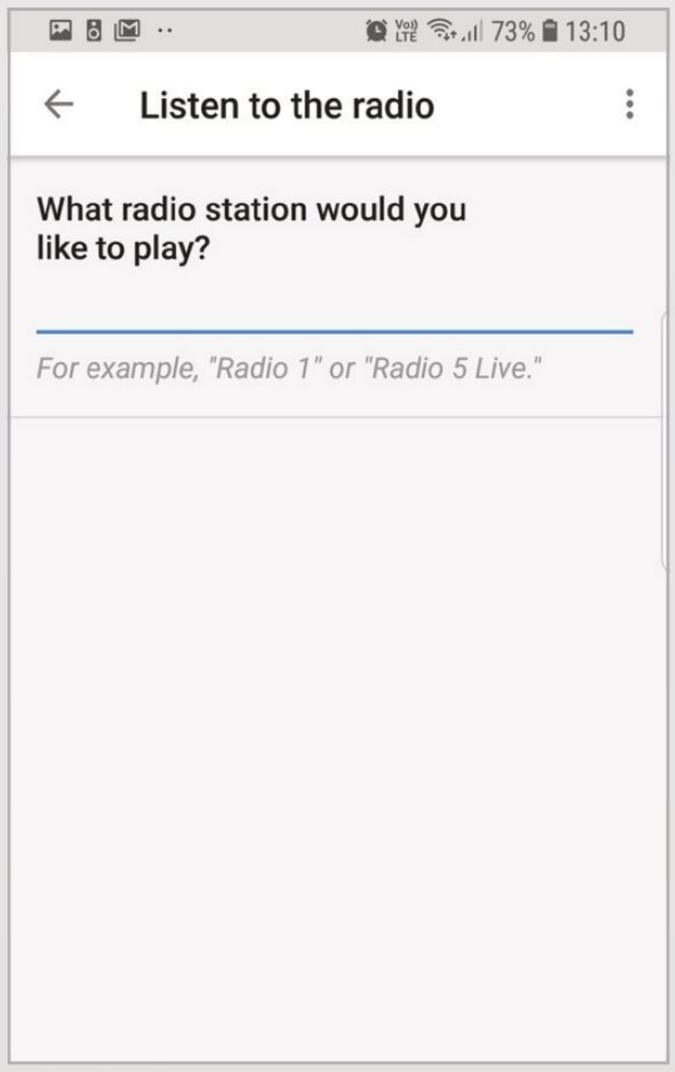
2 Below each routine name, you will see the number of associated actions. Tap a routine to start editing it. While all routines can be edited, you will notice they have differing numbers of actions that can be added. The pre-set routines illustrate this difference.



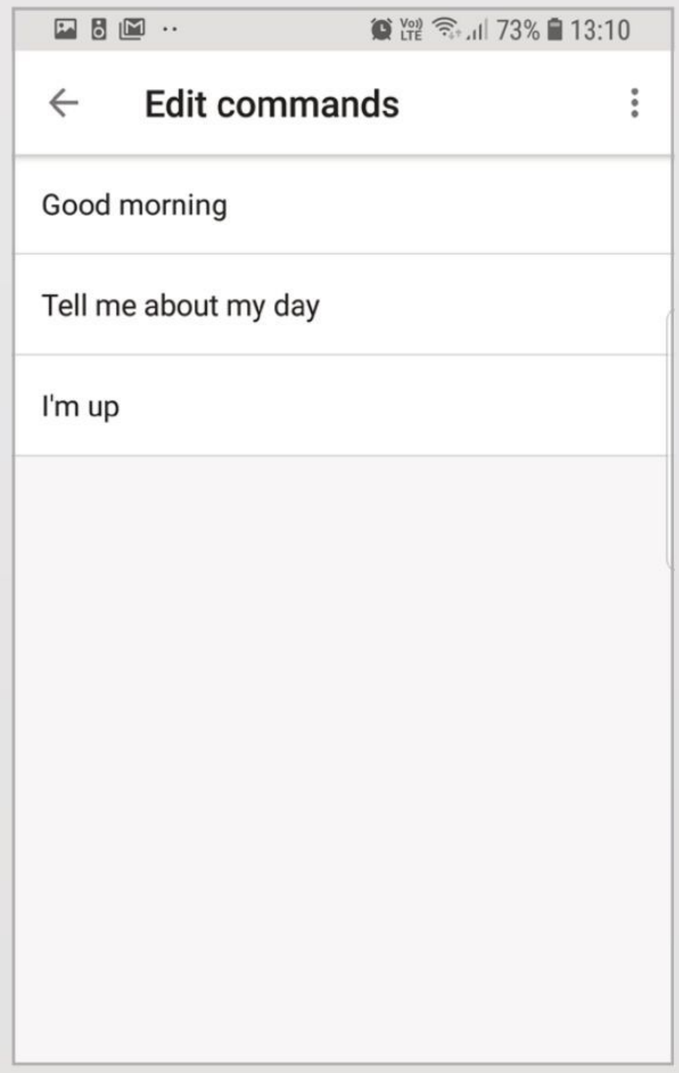
3 Each Routine is split into sections. These are: “When I say...”, (the command)“My assistant should...”, (the main actions to perform) followed by “And then play...” (additional actions). You can manage and edit each of these sections individually to create the routine you want.



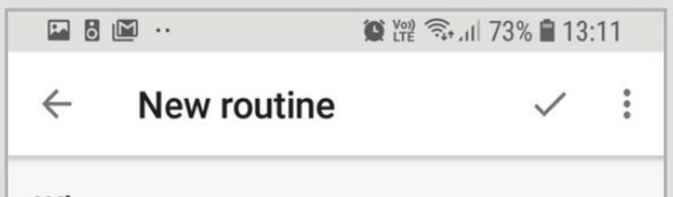
4 For example, the single command “Good morning” could take the phone off silent; tell you the weather, reminders and your commute information. It could then give you the news headlines from a variety of sources (BBC, CNN, etc.) before playing your favourite radio station.



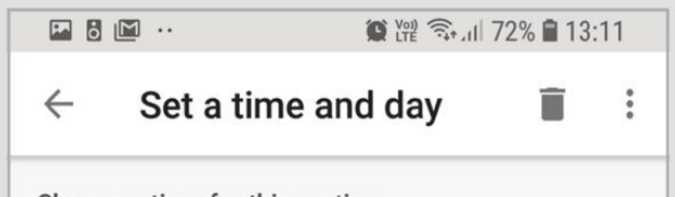
5 Tap the checkbox next to each action to add or remove it from the routine. If the action has a gear icon next to it, you can tap this to see further settings. For example, the Play Radio action allows you to choose the radio station you want to use, and music settings lets you choose the music source.



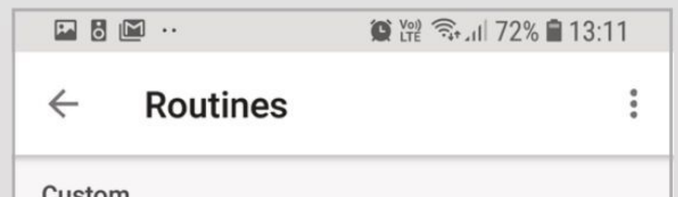
6 You can also change the command that activates the actions (although you will still need to say “Hey/Okay Google” first). Most pre-set routines have a couple of commands already set, but you can add a new one by tapping the top section, then tap + and type your desired command.



7 If none of the pre-set routines meet your needs, you can create your own from scratch. Open the routines settings in the Google Home app and tap the + button. Start by editing the command you want to use to activate it (e.g. “Good Morning”). Simple commands are the most effective, so keep it short for best results.



8 If you wish, you can set a day/time of day when the routine activates automatically although you can still activate the routine at other times with the command. Next, add an action, either by typing the name of a Google Assistant command, or by tapping “Choose popular actions”, selecting one and tapping “Add”.



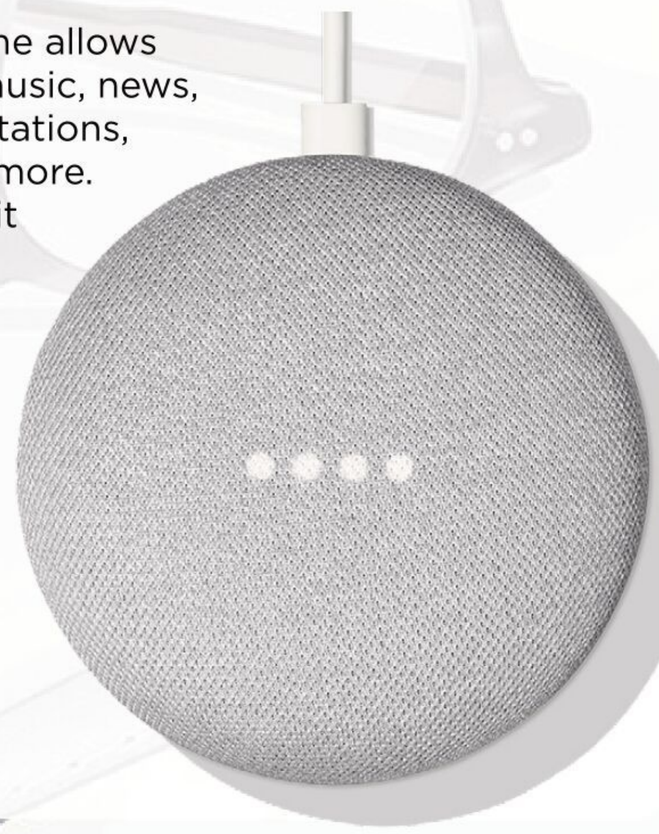
9 When you’ve finished setting up the new routine, tap the check mark at the top and the screen will change to display all routines. Your newly created routine will be given the name of the command word you used (e.g. “Entertain me”). Test the routine by speaking the command to your Google Home speaker.

10 Things to Try with Google Home

Your Google Home speaker is great for playing music or listening to the news, but it also allows you to do so much more! From getting information about your day, reading out a recipe and finding your phone, to playing a game or telling you a joke, there are literally hundreds of things it can do.

1 Listen to Audio

Your Google Home allows you to listen to music, news, podcasts, radio stations, audiobooks and more. You can also tell it to play ambient sounds in the background. Just say, “Hey Google, help me relax,” or “Hey Google, play forest/nature/ocean sounds.” You can even make it play white noise!



2 Control Your TV

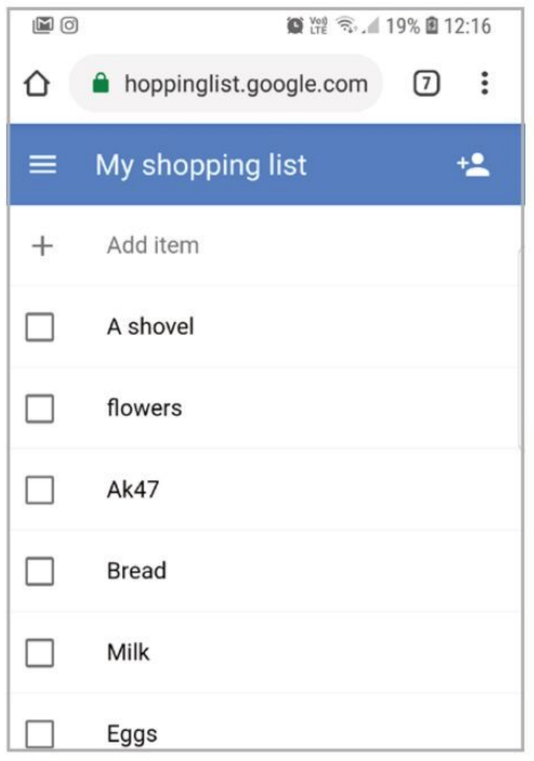
If you have a Chromecast plugged in (or built in) to your TV, you can easily control it with your Google Home speaker. If your Chromecast is plugged in to a power socket (rather than USB), you can even use the speaker to turn your TV on and off. Just say, “...Turn on the TV,” or “... turn my TV off.”

3 Plan Your Day

Start your day off by saying, “Hey Google, Good morning,” to hear traffic, weather and news reports along with a list of your appointments, reminders, and more; you can also ask for these things individually. If you need to find something nearby, just say, “...where is the nearest pharmacy?” for example.

4 Create Lists

You can create a list in the Google Home app and then add to it using your Home speaker. Once you have a list created, just say, “Hey Google, add orange juice to my shopping list,” or “... add paper towels and hand soap to my list.” For a reminder at any time just say, “...what’s on my shopping list

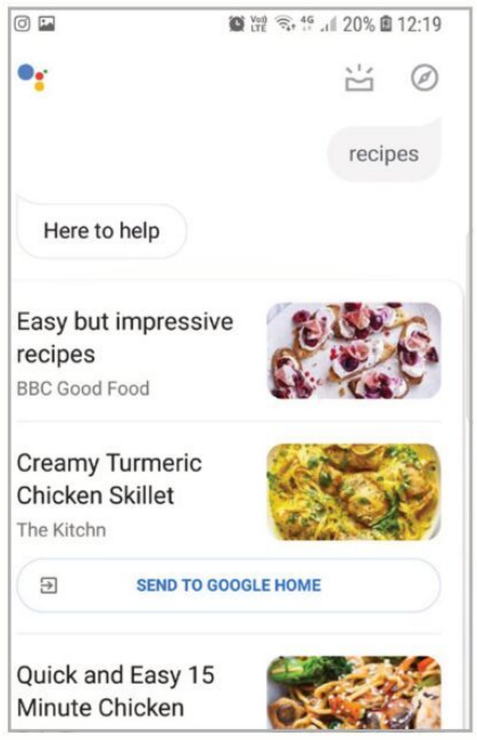


5 Find Your Phone

Never lose your phone again! Provided Voice Match is set up, you can ask your Google Assistant to ring your phone. To do this say, “Hey Google, find/ring my phone,” and your Google Assistant will ring your phone, even if it’s set to ‘Do Not Disturb’ mode.

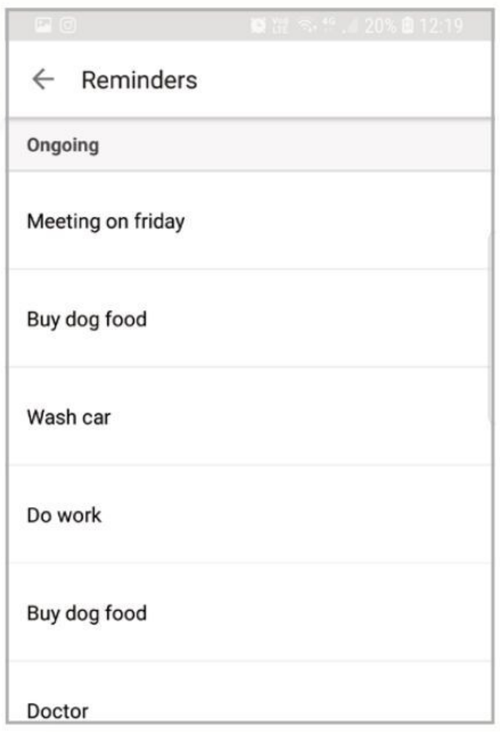
6 Cook

You can find and make your favourite recipes using step-by-step cooking instructions from your Google Assistant. Perfect for cooking with messy hands! For example, just say, “Hey Google, find a recipe for pancakes,” you can then say, “...prepare the ingredients,” for a list, followed by “ ...start recipe.”



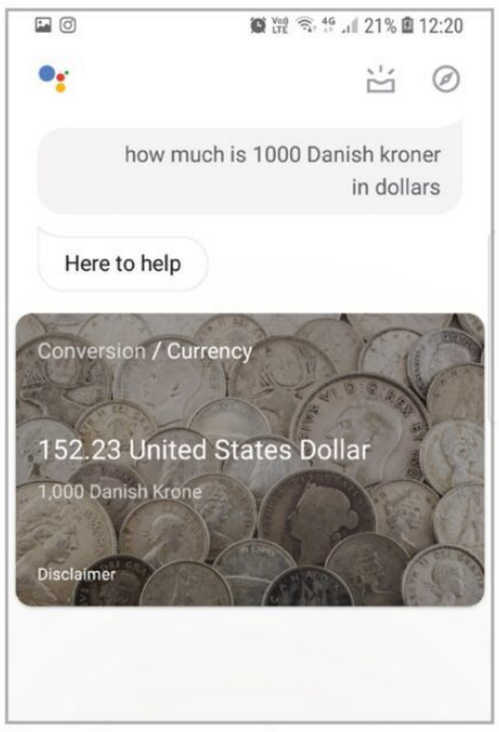
7 Manage Tasks

You can easily set and ask about reminders by saying, “Hey Google, remind me to...” You can also use it to set timers and alarms by saying, “Hey Google, set a timer for 10 minutes.” If you want to check how much time is left just say, “...how much time is left?” You set alarms in the same way.



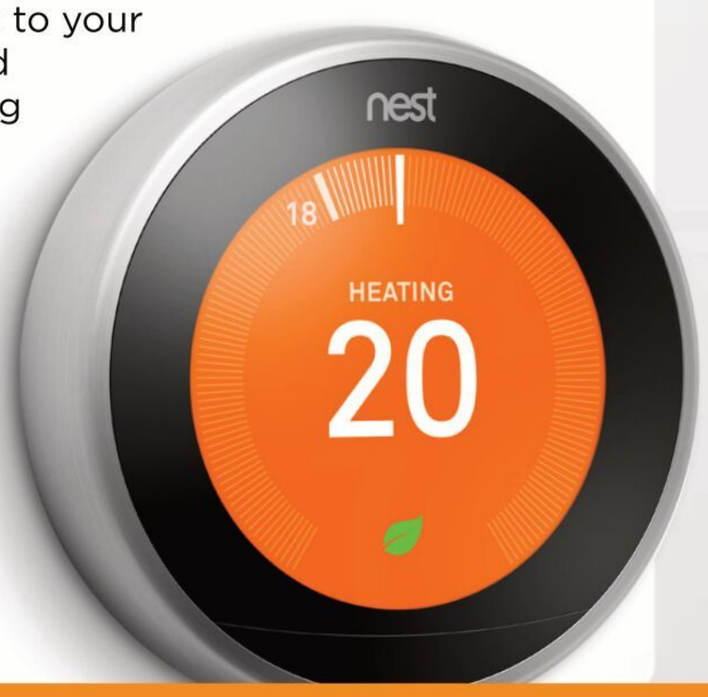
8 Get Answers

You can ask your Google Home to give you information about everything from finance to sports, you can ask for calculations, translations and unit conversions, for example, “Hey Google, how much is 1000 Danish Krone in dollars?” You can even ask for the nutritional information on most types of food.



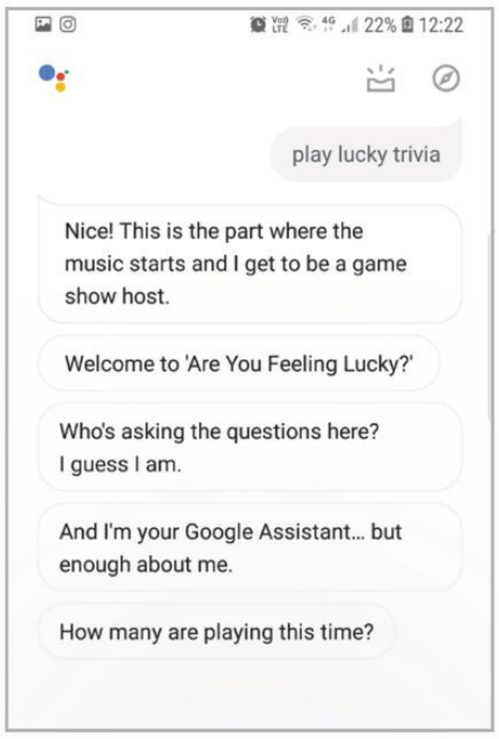
9 Control Your Home

If you have smart home devices such as smart plugs, a Nest thermostat or security cameras, you can link them to your Google Home and control them using your speaker. You will need to add the devices in the Home app, and follow any instructions to set them up. You may also assign devices to a room.



10 Have Fun

Your Google Home speaker lets you play games with it, simply say, “Hey Google, play lucky trivia,” (other games include Crystal Ball and Mad Libs). If you don’t want to play a game, just tell it to “...entertain me,” or say, “...let’s have fun.” You can even ask it to tell you a joke!

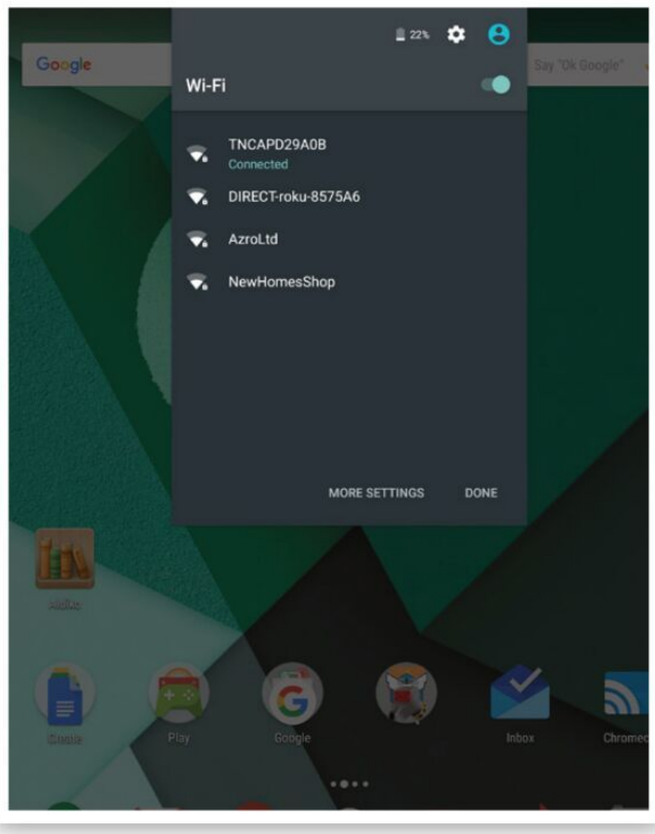


Navigating with Google Maps

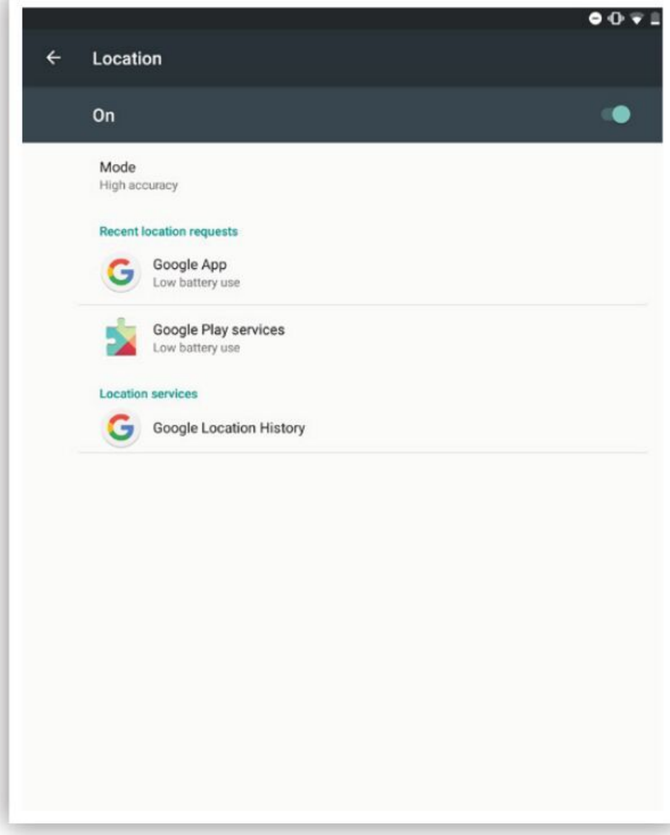
Google Maps is a fantastic tool but it can often be overlooked by Android users in favour of the seemingly more exciting features that their device offers. Google Maps is much more than just a way to find out where you are. It can help you find hotels and restaurants in the local area, show you a list of local plumbers, act as a satellite navigation tool and show you the distance between two points.

Set Up Google Maps

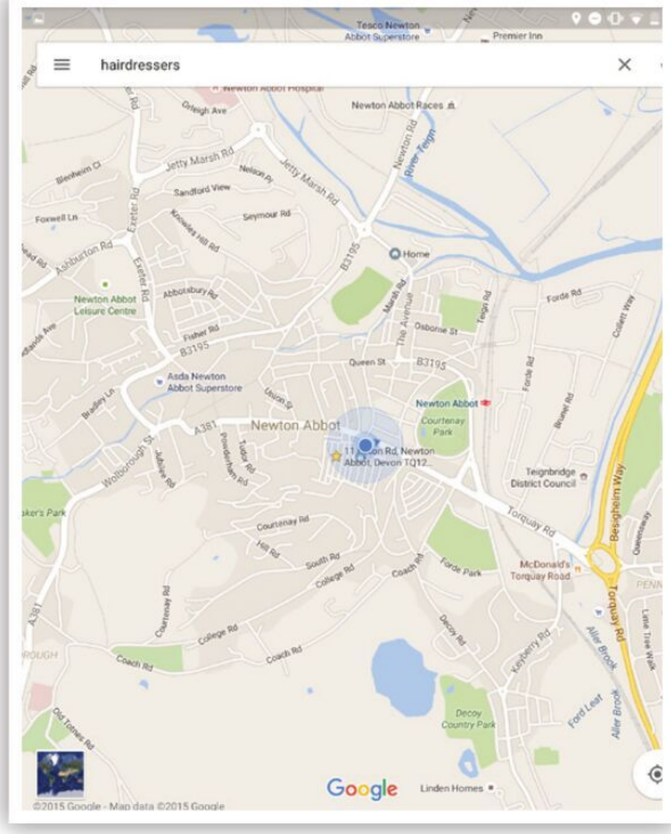
Before you can use Google Maps on your device, you will need to ensure that a few other services are activated. These may vary, depending on where you are trying to use the app.



1 Google Maps uses Live data, so you will almost always need to be connected to the Internet to use it to its full extent. So the first thing you need to do is connect to a Wi-Fi network or, if you are out of range of a Wi-Fi network, connect to a mobile data network such as 3G or 4G.



2 To take full advantage of all the features of Google Maps, you will also need to ensure that Location Services are enabled and that the GPS feature of your device is on. You can use maps without these features turned on but the information shown will be much more basic.



3 Now that you have a connection and location-tracking is on, you can go ahead and open Google Maps. Give the app a few seconds and it will pinpoint your location and zoom in to show it on screen. You are now ready to start using Maps to find places and navigate your way to them.

Location History

Location History helps you get useful information such as automatic commute predictions and improved search results by creating a private map of where you go with your logged-in devices. Rediscover the places you've been and the routes you've travelled in your timeline. It's easy to change or delete locations, days or your entire Location History. You can turn it on or off at any time.

Navigating with Google Maps

1. Maps Menu

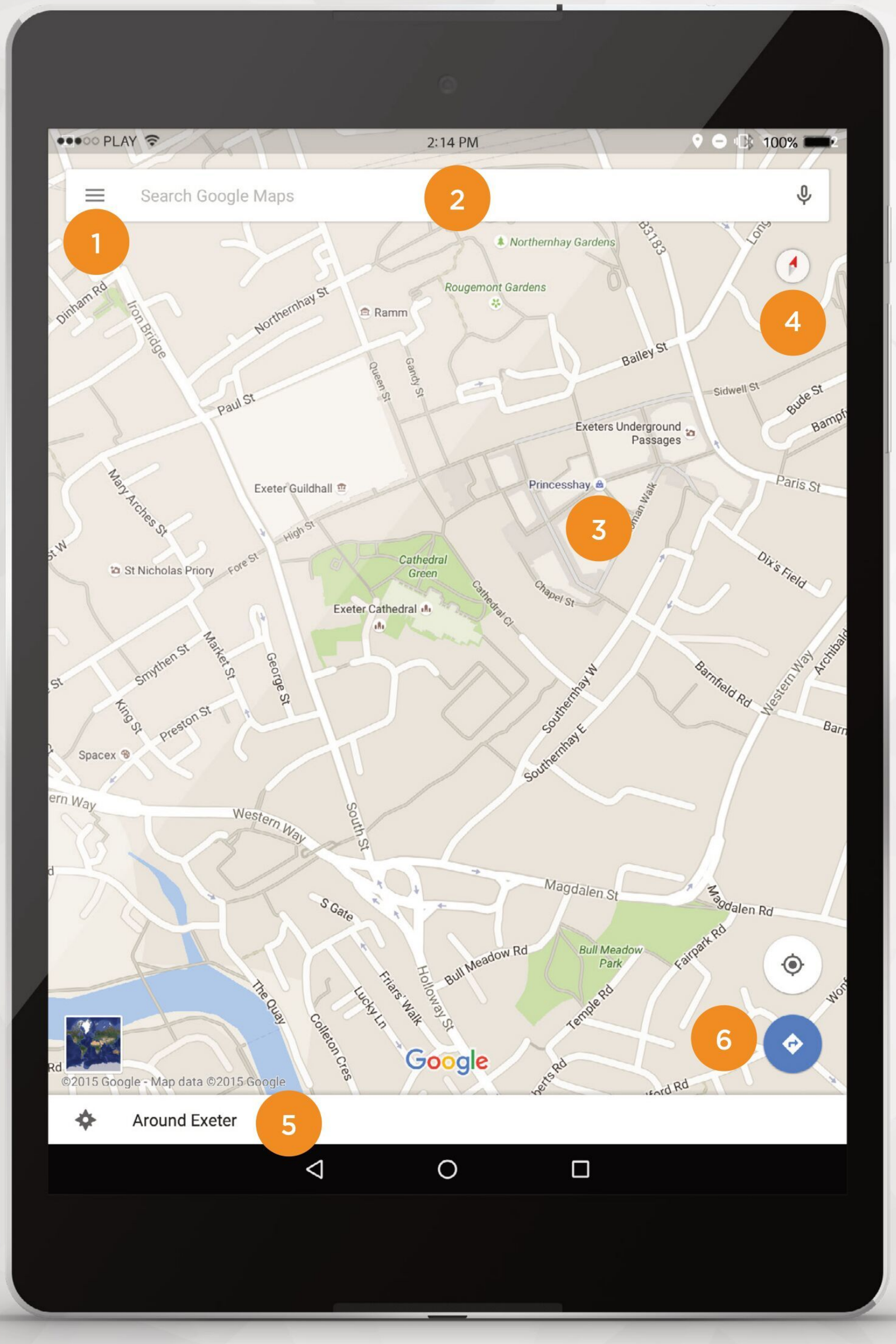
Tap this to open the main menu in Google Maps. Within the menu you will find links to Your Places. This shows previous searches, etc., maps that have been saved for offline viewing (more on that later) and enabled different map layers.

2. Search Maps

You can search for both locations like towns, cities, landmarks, etc. as well as specific businesses or types of business. When you tap the search bar, a list of previous searches, routes and locations will open, allowing you to pick one again.

3. Map Icons

As you scroll around the map, you will see various icons marking places of interest, restaurants, train stations and many other things. You can tap any of the icons to see more information in the panel at the bottom of the map screen (tap on or drag the panel up).



4. Find North

This is the compass, showing you at all times which direction you are facing. You can tap the compass button at any time to find North. The map view will rotate until it is aligned with North and you can then match it up to the compass.

5. Info Panel

When the map is focused over a town or city, the information panel will show information about that location (bars, restaurants, etc.). Tap or drag the panel up to view the info. If you tap an icon or set a pin in the map by tapping a location, the info panel will show details about that location.

6. Find Route

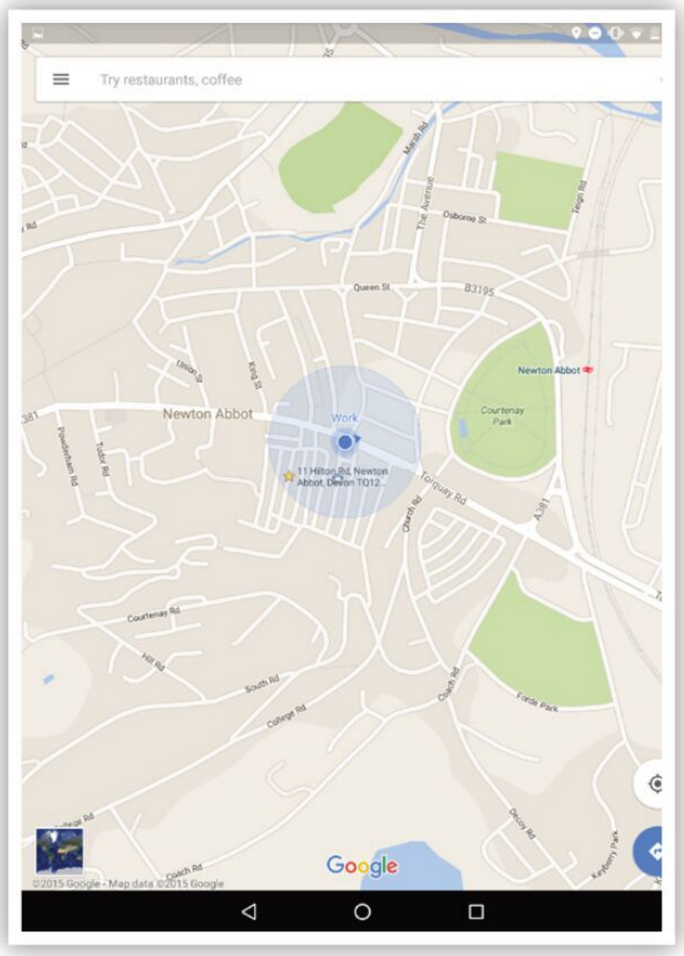
This is the button you tap to start planning a route and using the navigation tool. If you have a pin in the map, tapping this will find a route between your current location and the pin. If you tap it without a pin, a new screen will open where you can enter start and finish points.

Offline Maps

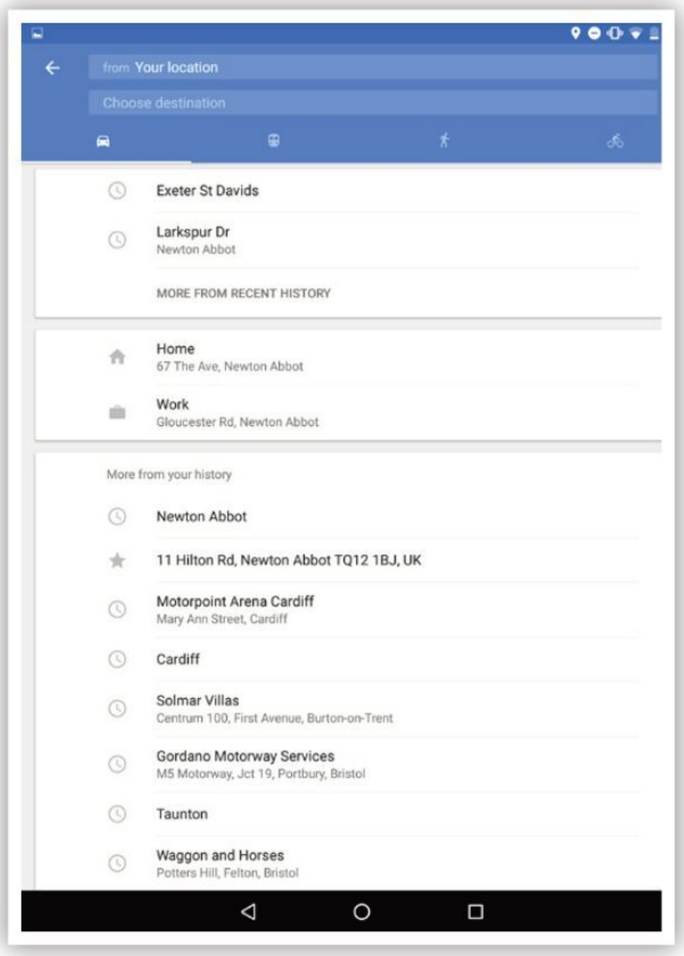
You can save maps for use offline (when you have no access to a mobile or Wi-Fi network, for example). Depending on the size of the area you save, these offline maps can be quite large and will expire after a certain number of days to avoid filling your storage up. To make an offline map, tap the menu button and select “Offline Maps”. Follow the instructions to save a new area.

Navigating with Maps

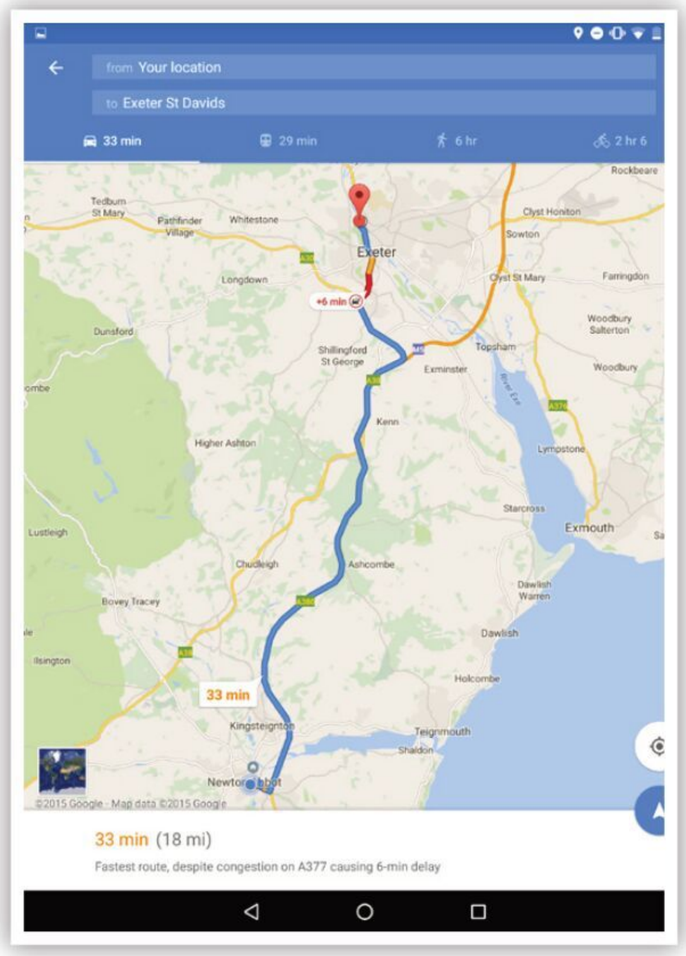
The Navigation option for Google Maps works just like a proper stand-alone Sat Nav. Let Google find your current location, enter a destination and then follow the directions shown on the screen. You can enter the destination by typing or speaking, although the voice option is not 100% accurate.



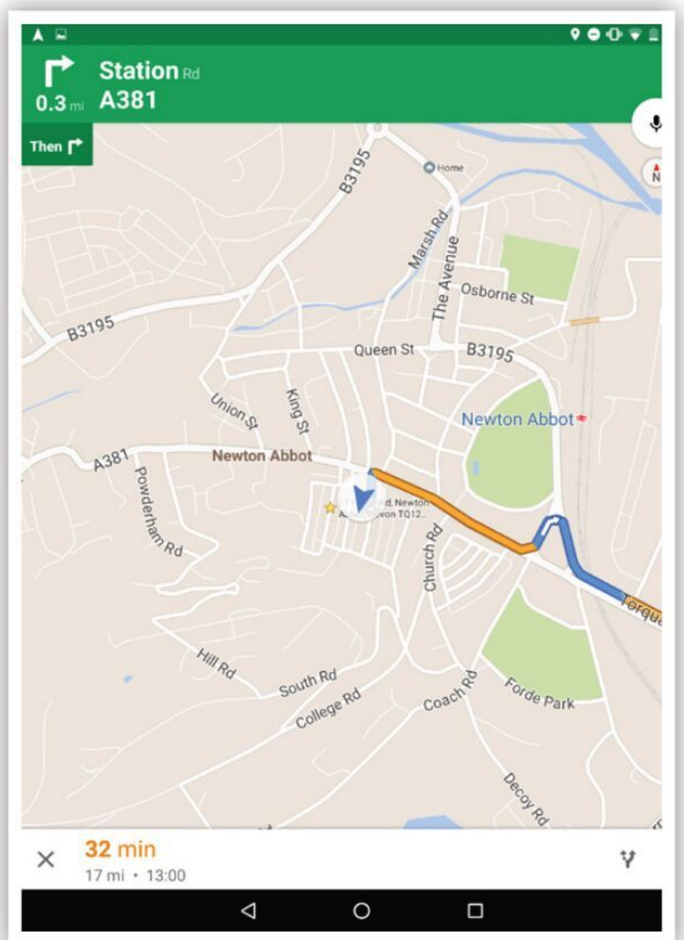
1 Ensure that GPS, Wi-Fi and, optionally, a data connection are enabled and open Google Maps. Let the GPS pinpoint your current location. If you are indoors, the GPS may struggle to find a satellite, so give the app a bit of time.



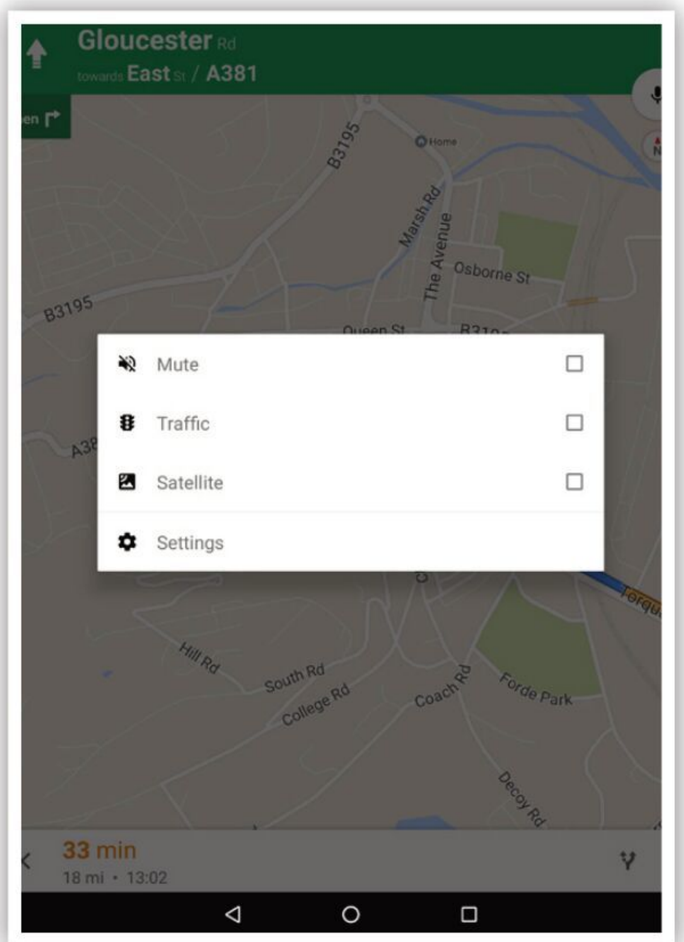
2 Press the blue Directions button located on the bottom menu that looks like a road sign. Type in your destination (and starting point if not your current location) and then touch the Get Directions button. Enable Navigation if asked (first use only).



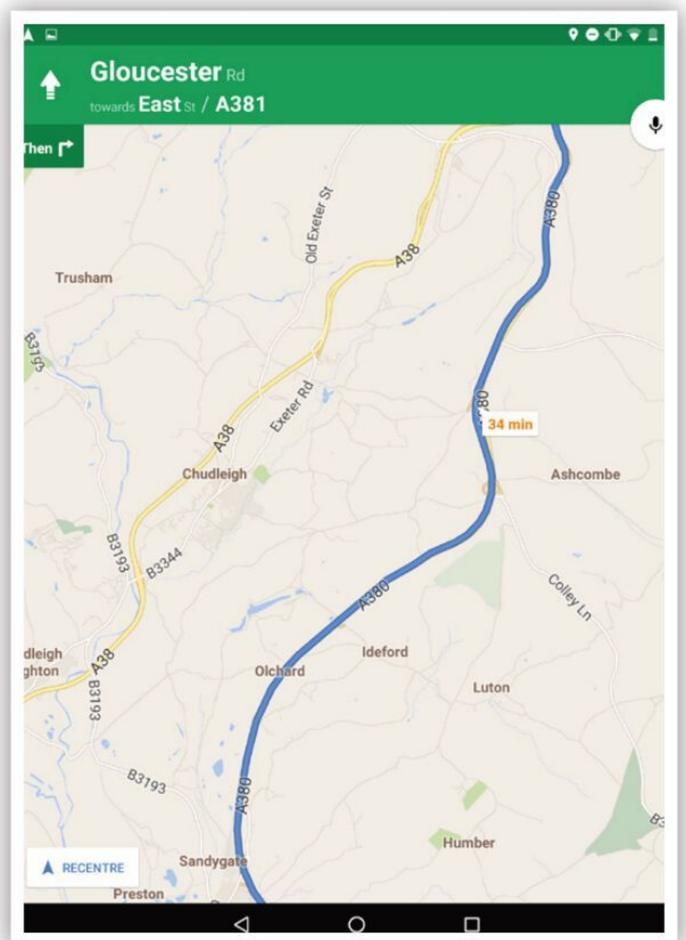
3 If you have searched for anything in maps before now, you will see a list of your location history on this screen. Tap any to select a previous destination. Once the route is plotted, tap the Navigation button at the bottom of the screen.



4 The map view will now change. You can now use your device in exactly the same way as you would a standard satellite navigation system. Clip it somewhere you can see it and start driving. You can buy car holders for almost any sized Android device fairly cheaply.



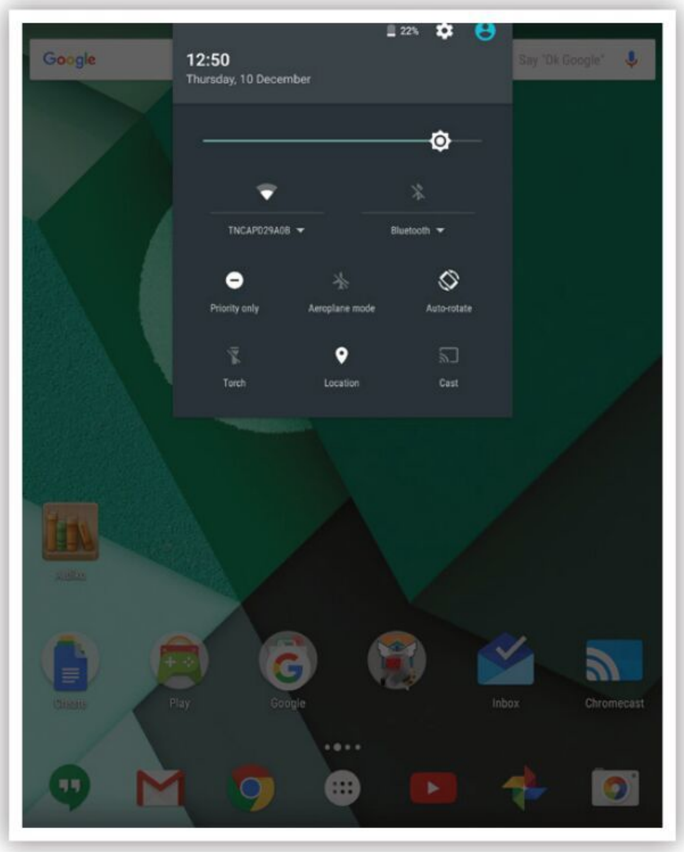
5 While in Navigation mode, press the Menu button to see options to mute the voice directions, check the overall route, change map layers and exit Navigation. You can tap the mic button to record the audio directions if you wish.



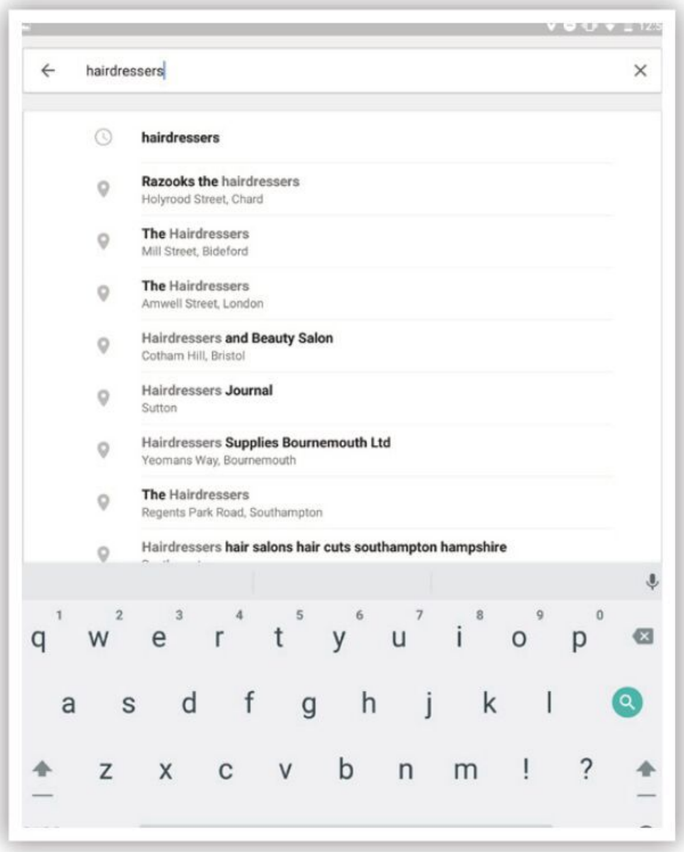
6 At any time, whilst navigating, you can zoom and slide the map around to suit your needs. To centre the map again, tap the Recentre button at the bottom. To view an alternative route, tap the split arrow button at the bottom right.

Local Search

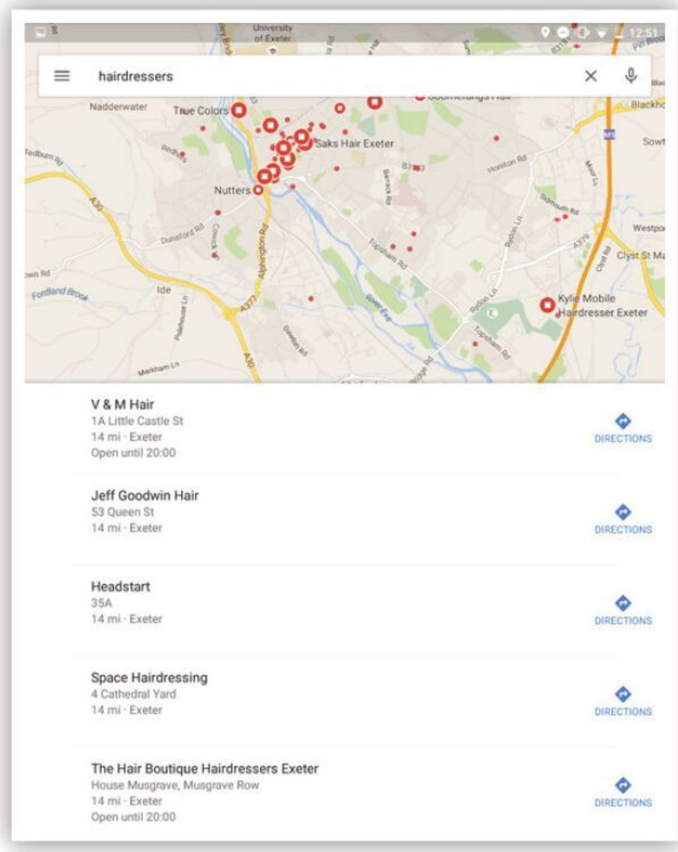
You can use Google Maps to find people, places and businesses in your local area. This is very useful both at home, for locating tradesmen, etc. and also great for finding places to visit or restaurants when you are in an area you don't know: on holiday for example.



1 Turn on Location, connect to Wi-Fi and open Google Maps. The local search feature also works using just your 3G or 4G connection, which is easier on your battery but isn't quite as accurate.



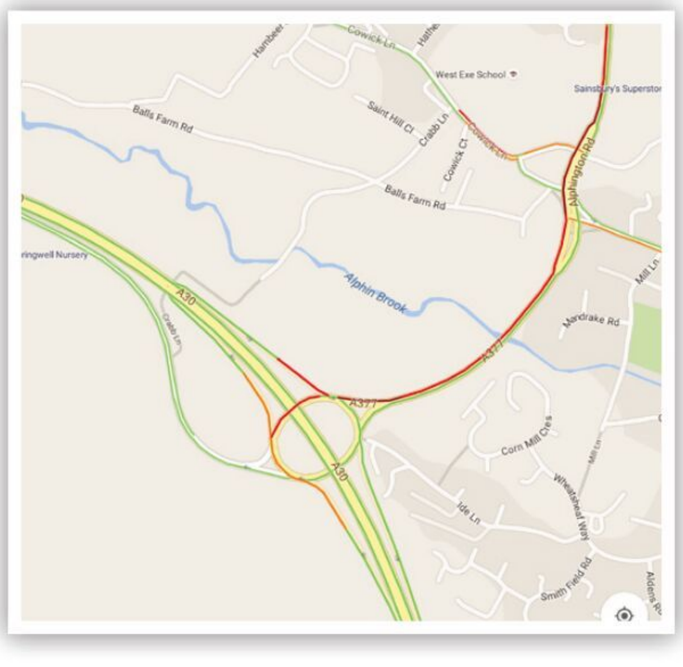
2 From the main map screen, tap in the search field and type what you want to search for. You can search for specific businesses or just type something like "hairdressers" to see all in that area.



3 Results relevant to your search will now be shown on the map. The bottom half of the screen contains a list those locations, along with a button to quickly load directions to each one.

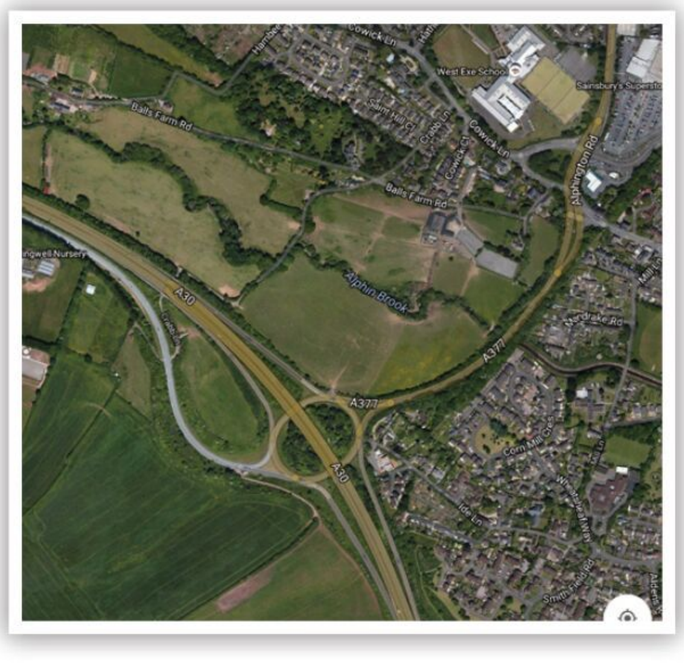
Map Layers

There are several different ways that you can view the map in Google Maps, from basic block colours to full satellite image. To see the available different layers, tap the menu button in the app.



Traffic

The Traffic layer allows you to see different traffic densities for the roads you plan to travel on. Traffic density is overlaid onto the standard map as a series of coloured lines. Red shows where traffic is heaviest, whilst green shows where it is flowing smoothly. If no coloured lines are shown for a section of road, the traffic information is normal or unavailable for that stretch. The information is usually more accurate in and around major towns and cities.



Satellite

This changes the map view from block colour image to a full satellite image. You can zoom in to the satellite image as you can with the normal map, and the level of detail captured is pretty impressive. You can overlay any other layer onto the satellite view (traffic, places, etc.). If you are using a mobile Internet connection to view Maps, bear in mind that viewing the satellite view will take more data and may cost more money.

Street View

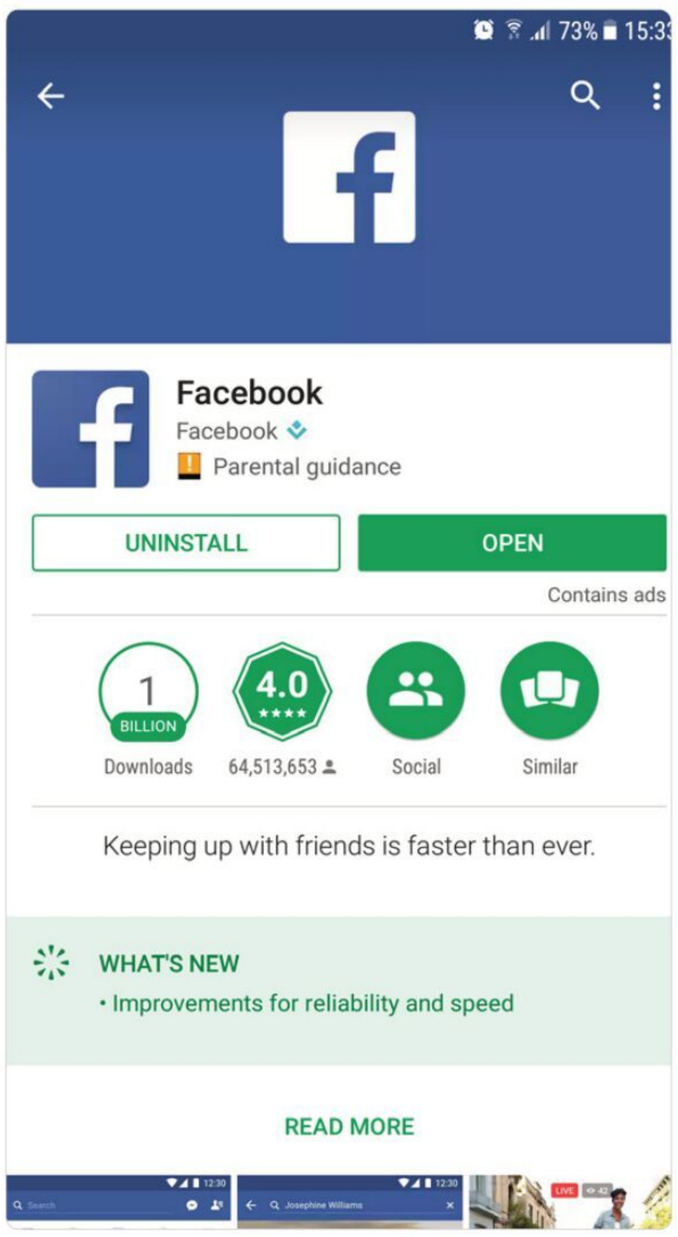
To see Street View on the Google Maps app, press and hold on the map to drop a pin. You can them tap the i icon to pull up the information sheet to learn more about that place, find directions, check out Street View and save or share the location by text or email. When in Street View, tap the arrows on the road to move the camera in that direction. To leave Street View, simply tap the Back button on your device to return to the maps view.

The Ultimate Guide to Facebook

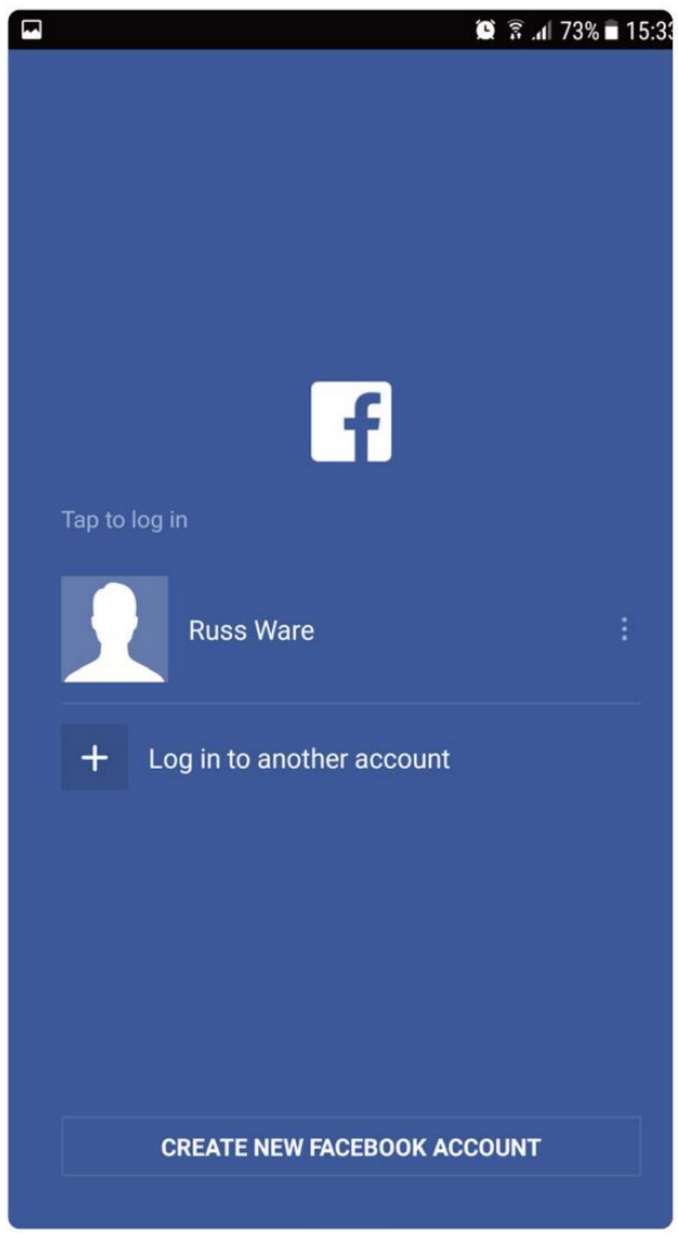
If you have used Facebook on a computer, you might assume that using it on your Android phone or tablet would be the same. Whilst there are lots of similarities between the browser and mobile versions of Facebook, there are also some important differences. There are also some very cool tricks the mobile version allows that can make using the world's largest social network much easier.

Facebook App Setup

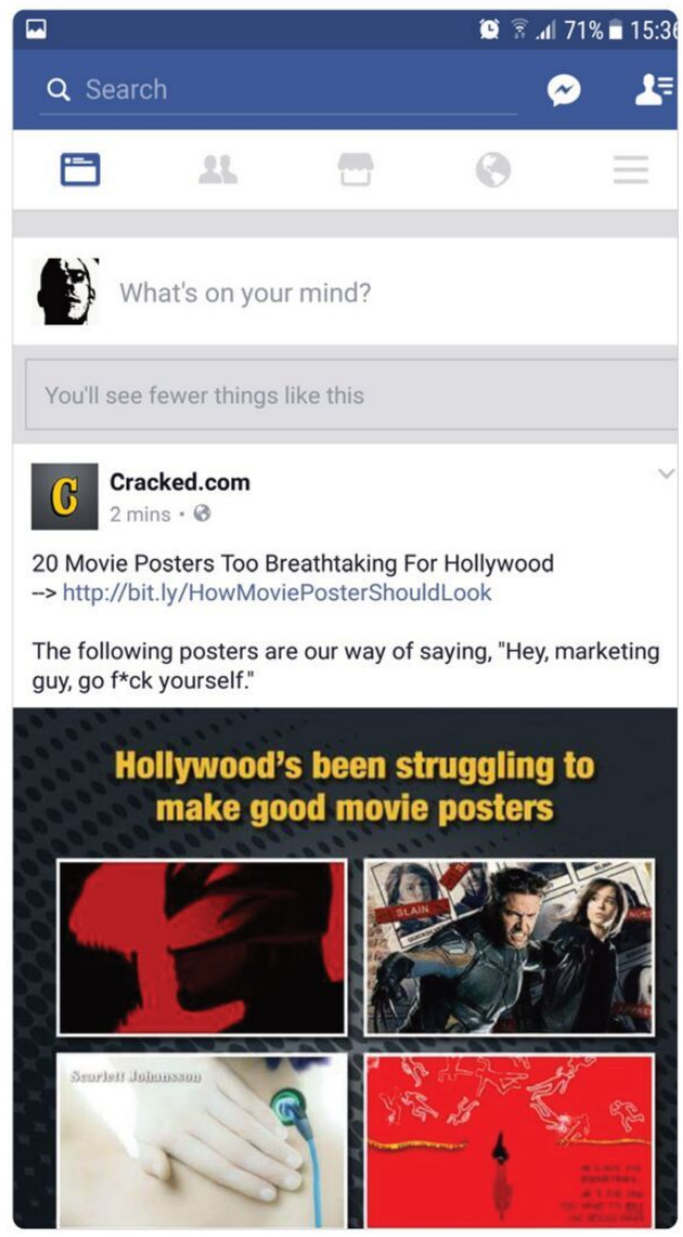
This guide assumes you already have a Facebook account set up on a computer. If not, you can create one easily at www.facebook.com or by clicking the link on the login screen of the app.



1 Download and install the Facebook app from the Google Play store. Facebook is one of the larger apps you will find on Google Play, so it might take a little while to download, depending on your Wi-Fi Internet or mobile data connection speed. It will then automatically install.



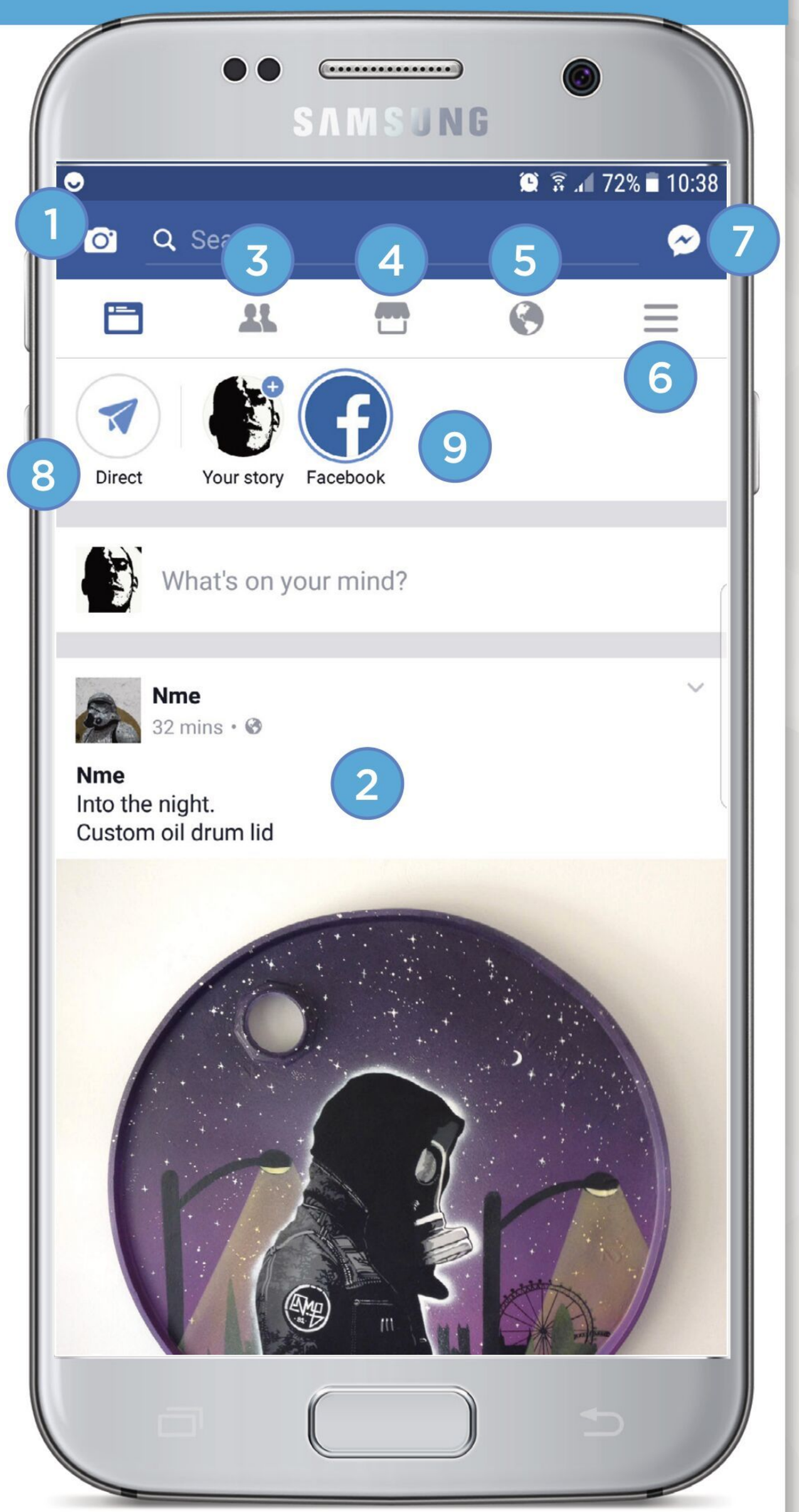
2 Tap the Open button and enter your Facebook login details in the spaces provided. As mentioned, there is also a link to create a new account if required. There is also a link to tap if you have forgotten your password. With your details entered, tap the Log In button.



3 You may see the option to let your device remember your log in details, to speed up getting in to your account next time it is needed. You will then allow or deny Facebook permission to access the device's location. You can always change this later but to get the most from the app, tap Allow.

Navigating the Facebook App

The Facebook app is laid out differently to the browser version, even on the larger screen of a tablet. Let's take a look at the key part of the app on a mobile device.



1 **Facebook Camera -** The new in-app camera allows you to quickly send photos and videos to individual friends, add images to your Story or create a new post based around an image or video. The camera includes lots of filters and effects, including the ability to add masks (like those seen in Snapchat) in both still and moving images.

2 **News Feed -** In this image, the News Feed is selected. This is where you will see status updates from your friends, as well as posts from any pages you follow. You can see that the name of the person or page posting is displayed (NME in this case) along with how long ago it was posted. Feed options hide under the small arrow on the right.

3 **Friend Requests -** If you have any new friend requests, they will displayed when this tab is tapped. You can confirm or delete friend requests at the top of the tab and then scroll down to see suggestions for friends you might wish to add. Tapping the blue friend button at the bottom right allows you to search for friends and upload a contacts list.

4 **Marketplace -** The marketplace is somewhere for you to sell unwanted items to others based on your location (not just to Facebook friends). You can view items by category using the circles at the top of the page. To sell your own item, take a photo of it and then tap 'What are you selling?'. Complete the information requested and tap Sell.

5 **Notifications -** If someone comments on one of your posts, tags you in a photo, mentions you or likes something you have posted, you will see a notification badge here. Click the notifications tab and you can see a list of notifications, sorted into the order which they appeared. Tap any notification to see the post it refers to. Blue-shaded notifications are unread.

6 **Facebook Menu -** This is where you can find all of the settings and options for the Facebook app, as well as where you look to see all of the things that appear in the left-hand sidebar on the browser version of Facebook. Things like Events, Pages, Groups and Apps will appear here. Not everything you can see in the browser version will be here.

7 **Facebook Messenger -** Facebook Messenger is the stand-alone app you need to install if you want to be able to instant chat through Facebook. Tap this icon to seamlessly open Messenger, where you can start new conversations or click on conversations you have already started, even if you started those in the browser version of Facebook.

8 **Direct -** Direct is a new direct messaging feature of the Facebook app, allowing you view replies to your stories or send you photos and videos. It works something like a comments feed but privately between yourself and the person who replied to your story etc. Once the conversation ends, the images or videos sent will disappear.

9 **Stories -** Think of Stories in Facebook like messages made up of images. If you have ever used Snapchat, it is a similar feature to stories seen in that app. You create your story and either send it to someone using Direct, or you make it available to your friends. It will appear at the top of their News Feed for two days before disappearing.

18+

WHAT IS AVAXHOME?

AVAXHOME-

the biggest Internet portal, providing you various content: brand new books, trending movies, fresh magazines, hot games, recent software, latest music releases.

Unlimited satisfaction one low price
Cheap constant access to piping hot media
Protect your downloadings from Big brother
Safer, than torrent-trackers

18 years of seamless operation and our users' satisfaction

All languages
Brand new content
One site

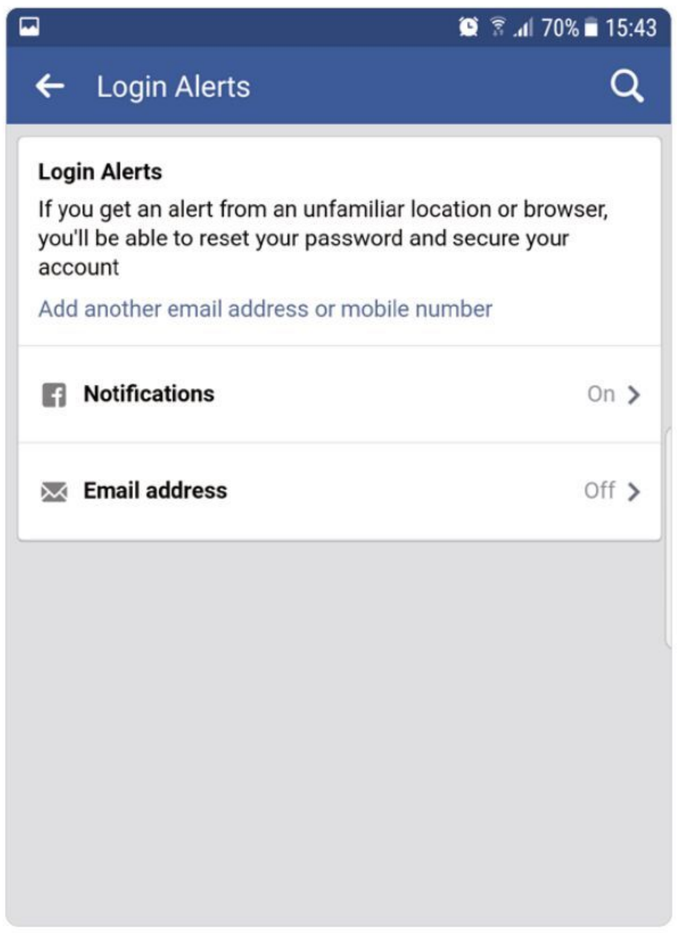
AVXLIVE.ICU

AvaxHome - Your End Place

We have everything for all of your needs. Just open https://avxlive.icu

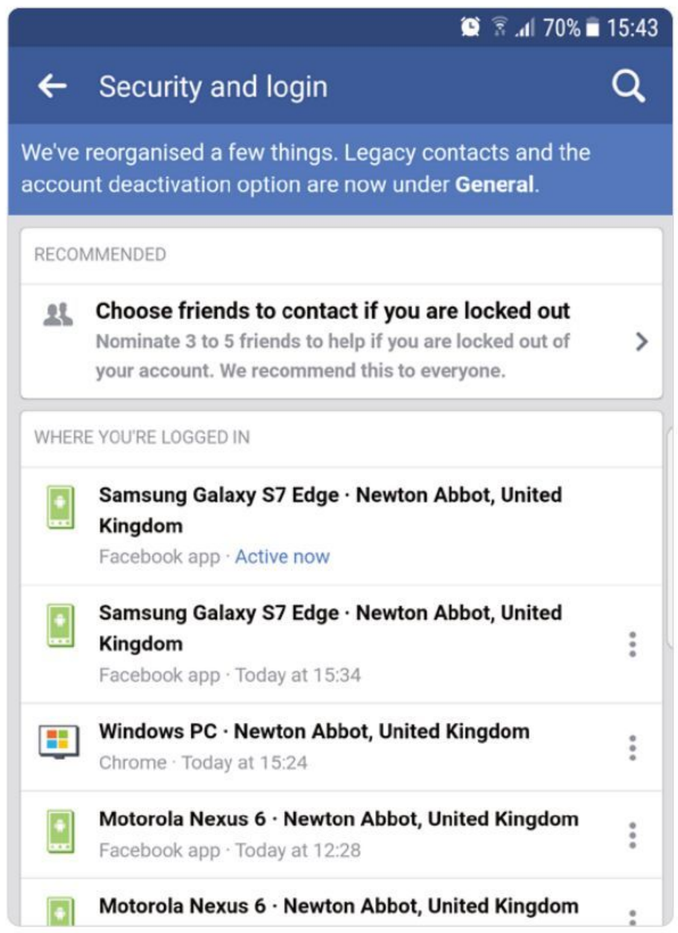
Facebook Security and Privacy

With the Facebook app up and running on your device, the next thing you should do is check and edit the privacy and security settings. Tap Menu > Account Settings while in the Facebook app.



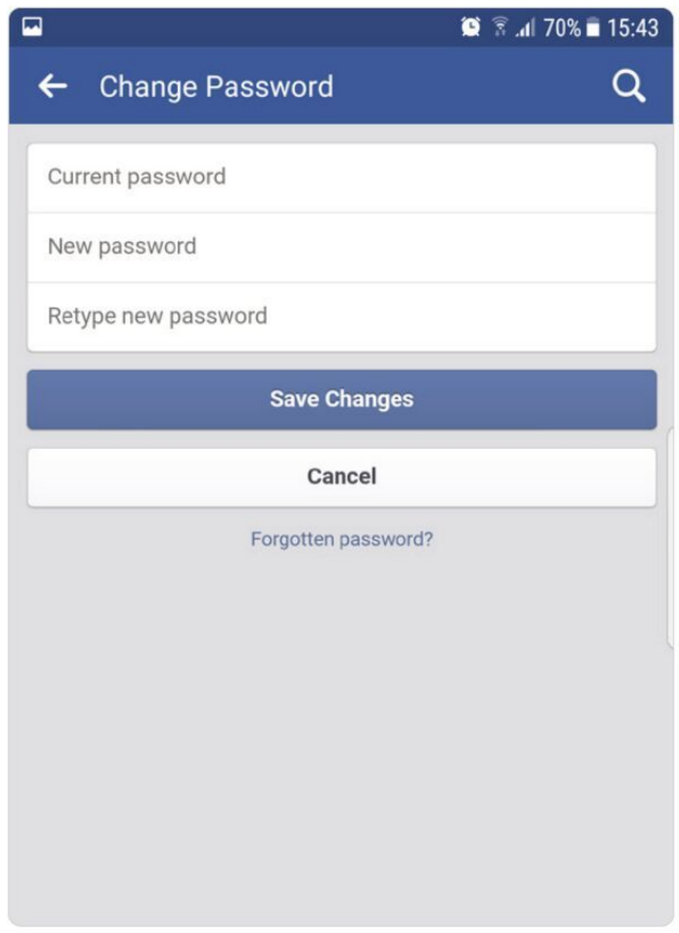
Login Alerts

If you are concerned that someone is logging in to your account without your knowledge, the first option is to immediately change your password. Another option is to enable Login Alerts. This lets you choose a method, i.e. email or sms message, of letting you know when a new device logs in.



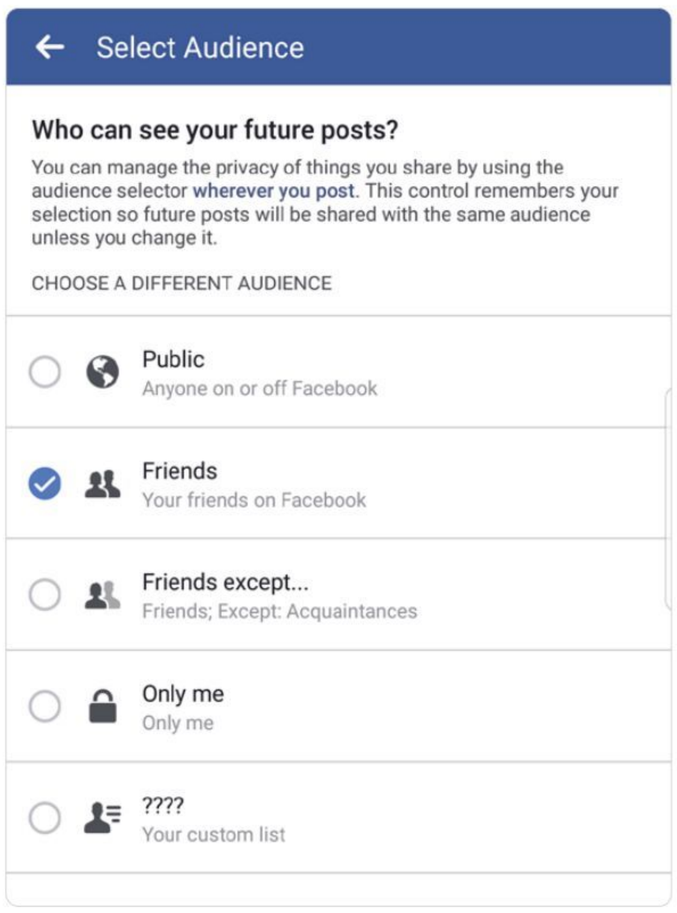
Known Login's

The security settings includes an section called Where you are logged in. This lists all of the devices (phones, tablets, computers) which have accessed your Facebook account in the past. It is a good idea to clear this list if you are using the Login Alerts option.



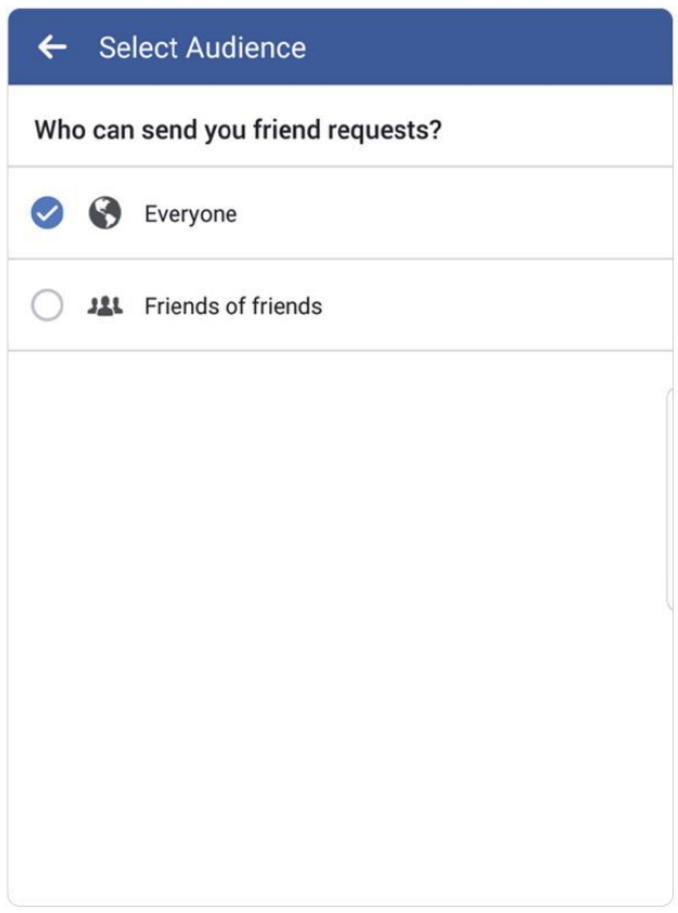
Change Password

Changing your password is one of the simplest ways to add security. Ideally, use a combination of at least 6 letters, numbers and punctuation marks. Avoid including your name or common words. Don't use your Facebook password anywhere else online and never share your password.



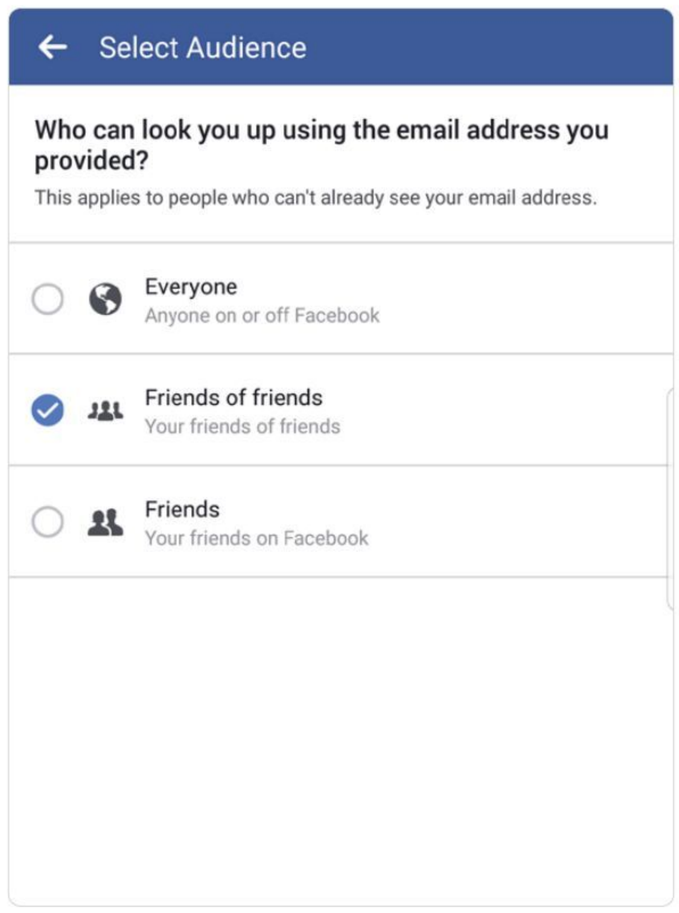
Who can see my stuff?

Move in to the privacy settings and you can see controls for who can see your posts, including images, that you add to Facebook. You can change who sees future posts (from this point on) or you can limit future and old posts. Content you have shared may change for some people.



Who can contact me?

This controls who can send you friend requests, Anyone or Friends of Friends, and how messages are filtered out within your inbox. Basic filtering allows you to see messages mostly from people you know but the occasional unknown contact may get through.

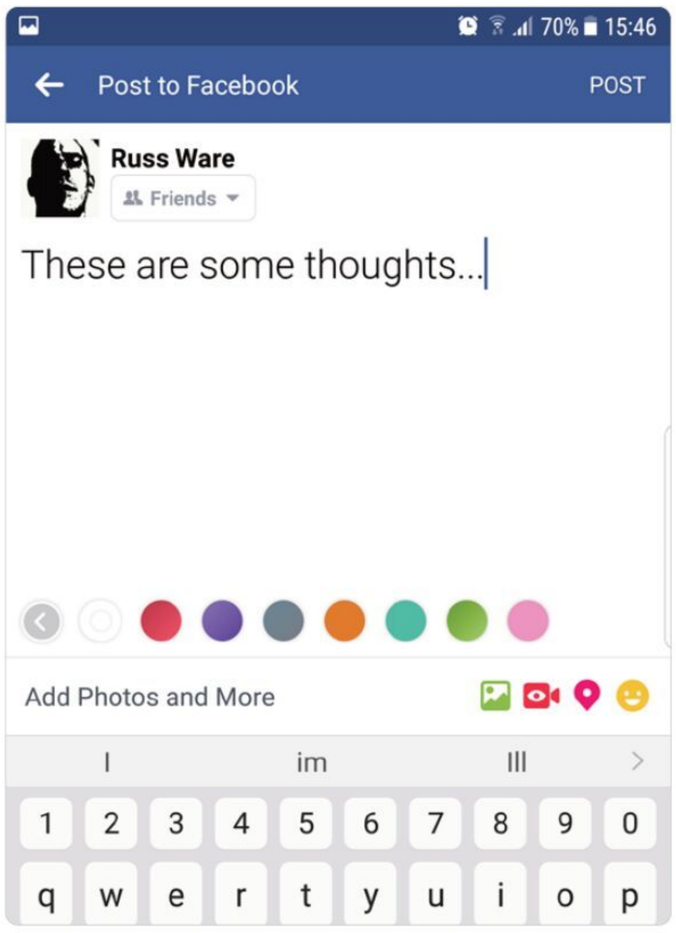


Who can look me up?

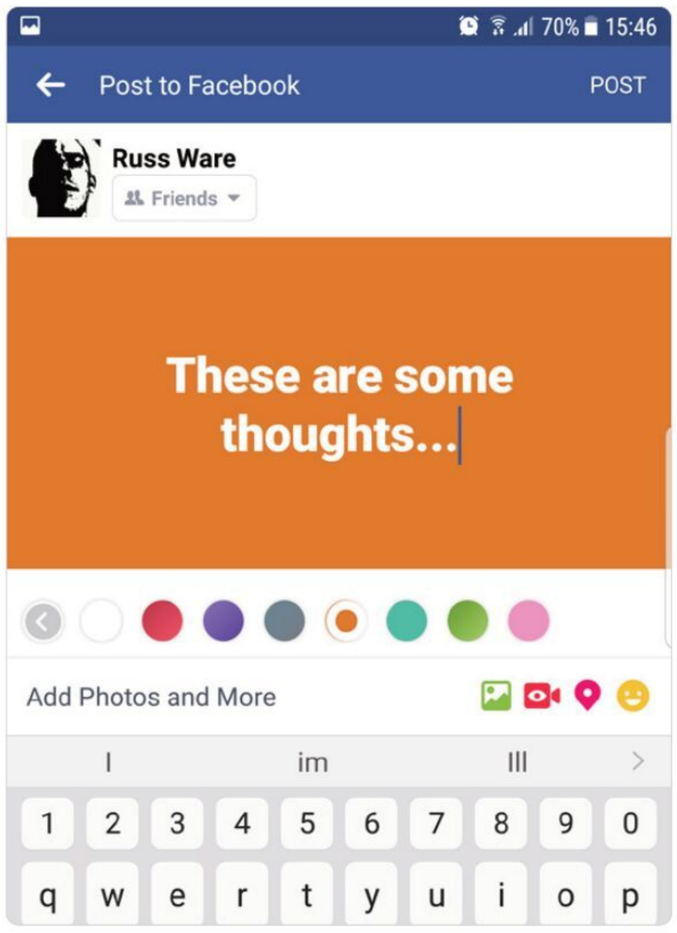
This section controls how visible you are, or to be more exact, how visible your Facebook profile information is. If you want to allow people to be able to view your email and phone number used when setting up your account, leave as is. If not, change these settings as a priority.

Posting on Facebook

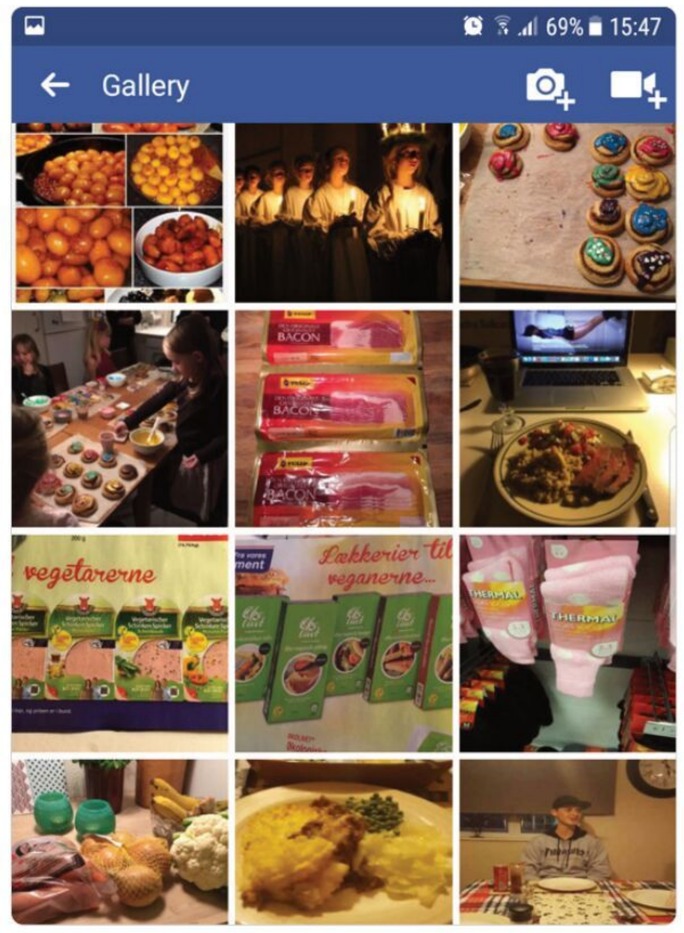
Posting a message to the News Feed, sometimes known as "Updating your status", has changed over time to include several different features and post types.



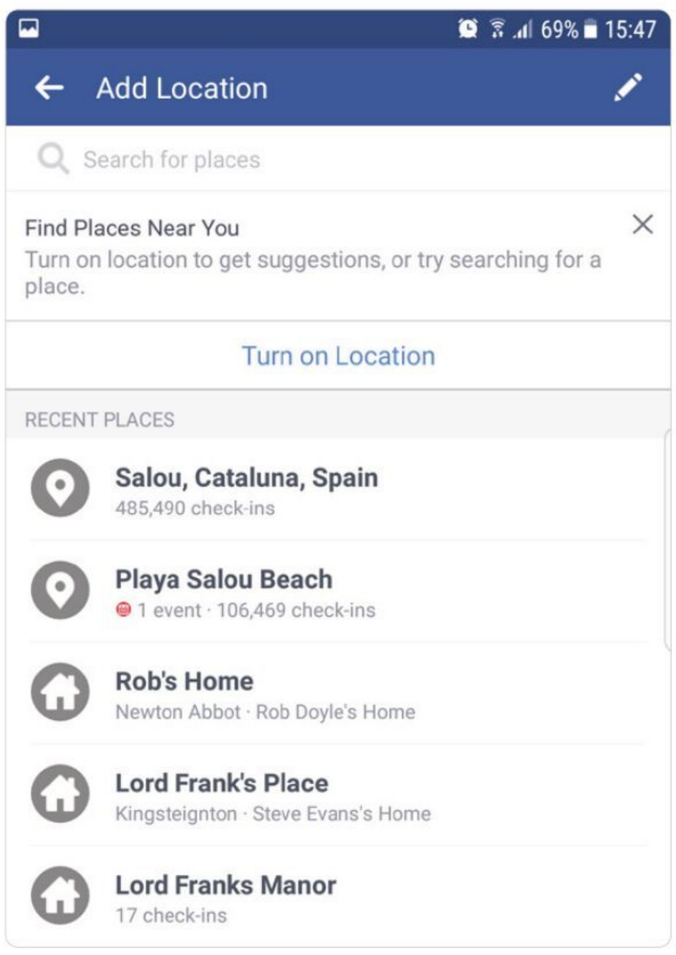
1 To create a new post, simply tap the 'What's on your mind?' at the top of the News Feed. In its simplest form, a post is made up of just text. You can type in the box that opens and then tap the Post button at the top right of the post creation screen. Your post then appears on the News Feed.



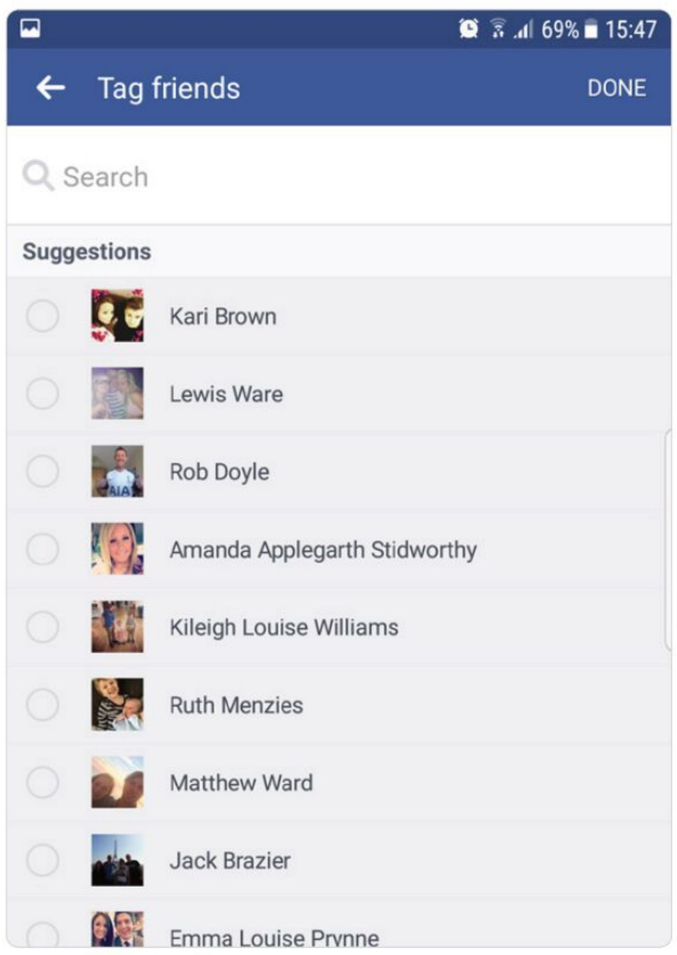
2 A relatively new feature of Facebook posts is the ability to change the colour of the post background. You choose the background colour by tapping the multi-coloured Aa button at the bottom of the post text box. Tap any of the coloured circles to apply that colour.



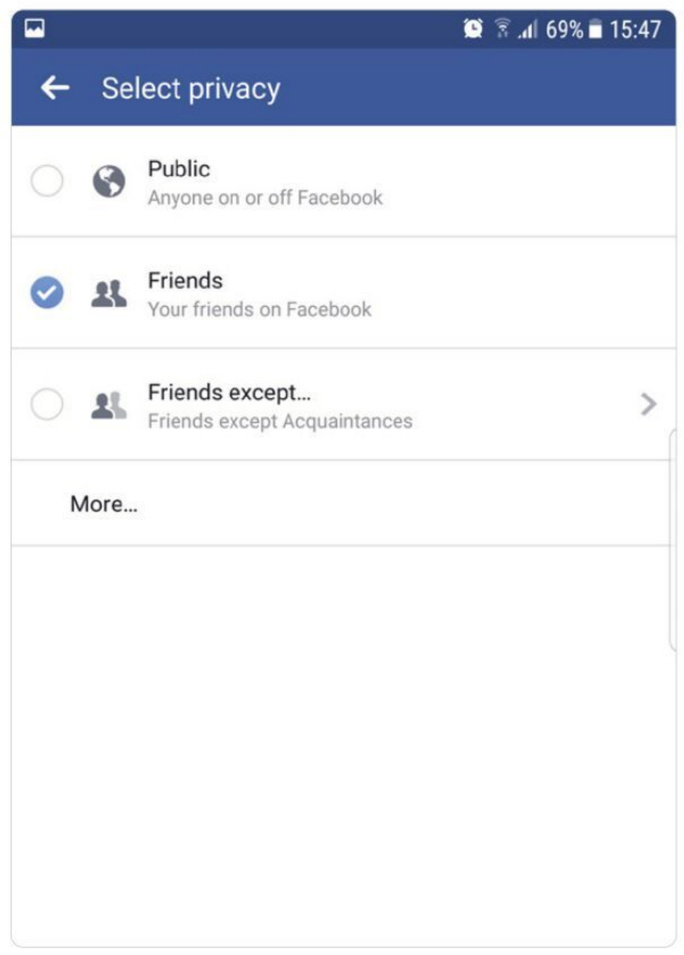
3 If you want to add a photo or a video, tap the Photo/Video button below the text box when you are creating a post. You can then either choose an existing image on your device, or tap the camera buttons at the top-right (still and video), and grab a new image to post.



4 If you want to tell your friends on Facebook where you are when you are posting, you can Check In. Using your location, Facebook will pull up a list of suggestions and previous check in locations. You can either pick one of these or create a brand new check in location.



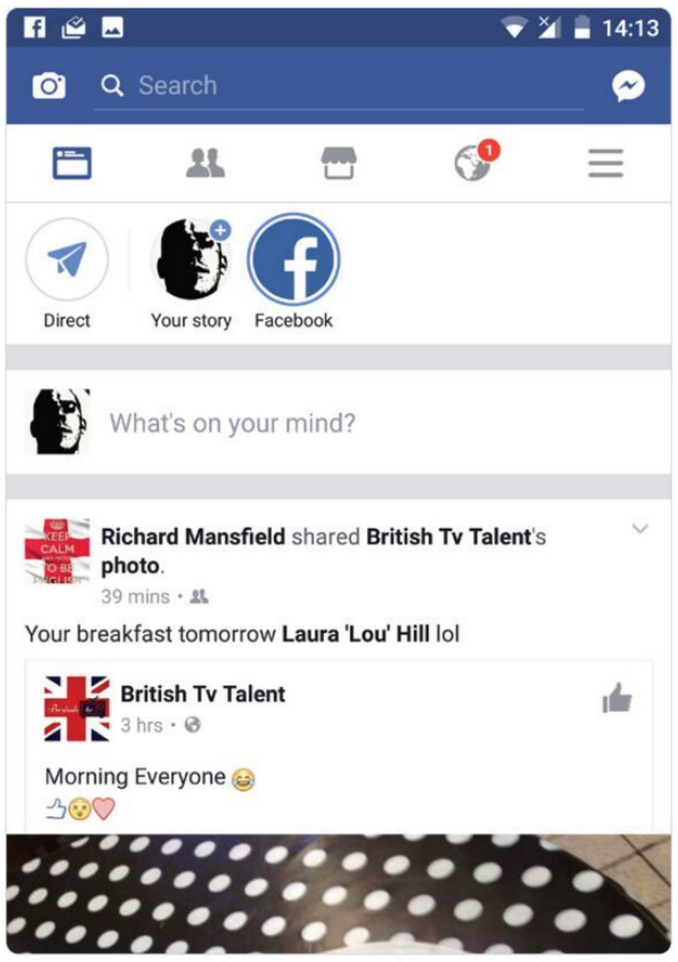
5 If you want to alert friends to your post, you can tag them in the update. Tagging means that the person will see a notification when they next check Facebook, making it a great way to ensure someone specific gets to see the post. Typing their Facebook name in the text box has the same effect.



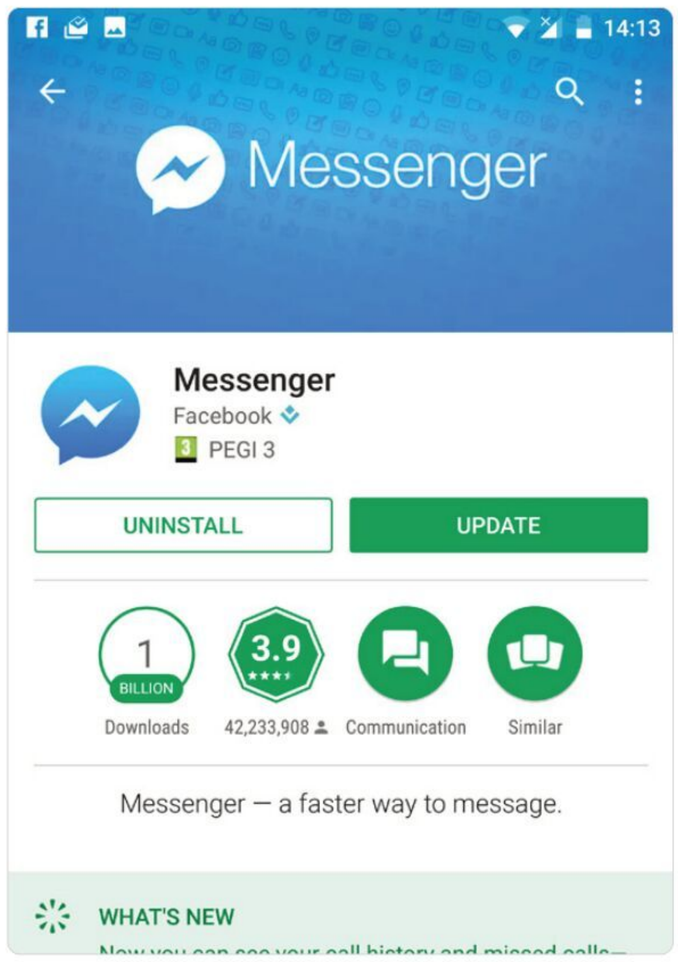
6 You can choose who sees each post on a individual post basis. Write and configure your post with images, etc. Before you tap the Post button, tap the button just below your name to open the privacy menu. This lets you choose whether your post is public, seen by friends or by friends of friends.

Using Facebook Messenger

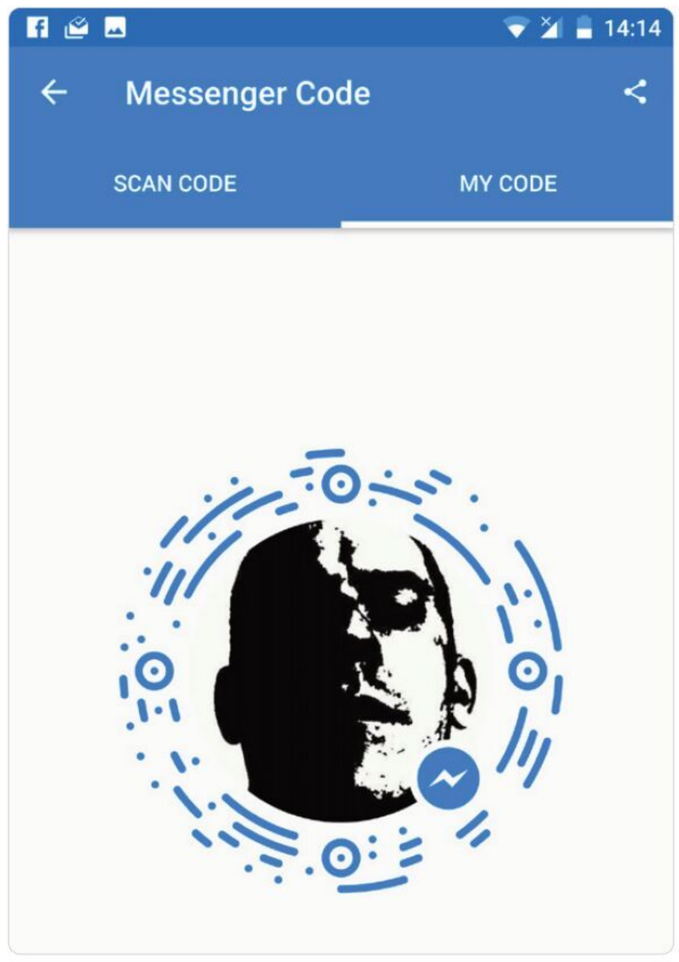
Although designed primarily for use on phones, Facebook Messenger can be used effectively on your other Android devices. Additional features include group chats, easier photo sharing and Chat Heads.



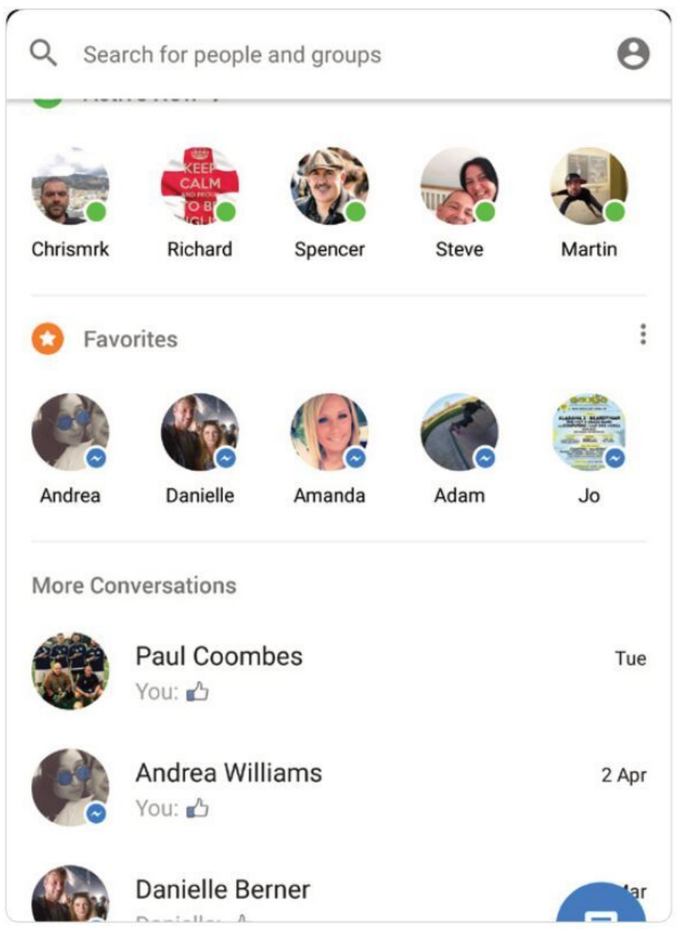
1 You will need to have the Facebook app installed on your device before you can use Facebook Messenger. Once you have installed Facebook and logged in with your account details, look for the Messenger chat bubble icon at the top of the main interface.



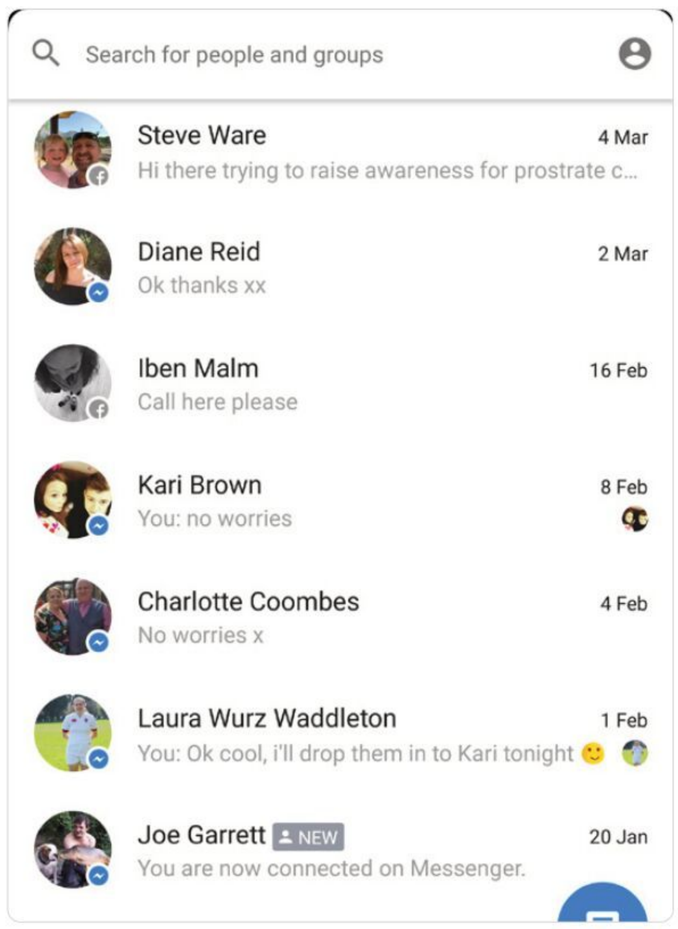
2 Technically, the Facebook Messenger chat feature is a separate (but linked) app, so you will now need to install it. You can search for and install the app from the Google Play store but it is just as quick and easy to do it through the Facebook app. Just tap Install.



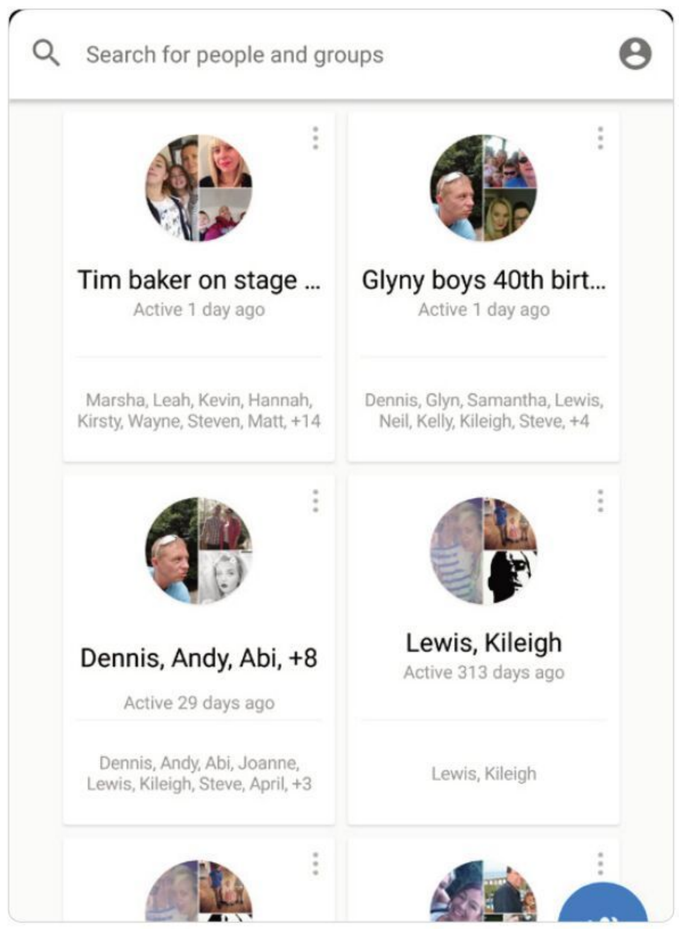
3 To have a normal instant chat with any one of your Facebook Friends, open the main Facebook app and tap the messenger chat bubble icon at the top of the screen. If this is the first time you have used the app, you will be prompted to Open Messenger and then sign in (using your FB details).



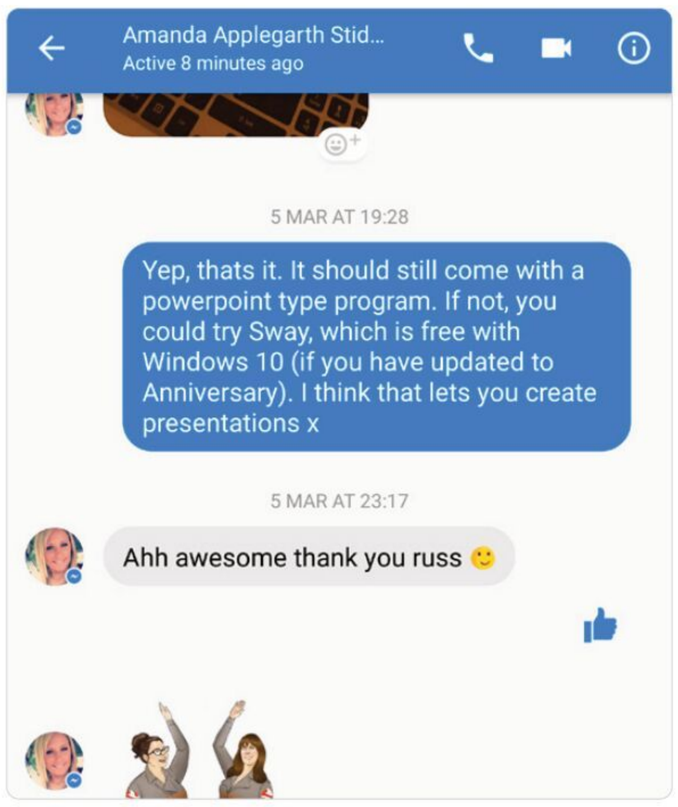
4 A list of any recent chats, including those from other devices, will be shown at the top. These are just below the new area for the Messenger Day feature. This allows you to show your friends on Messenger what you are up to and to encourage them to interact with you.



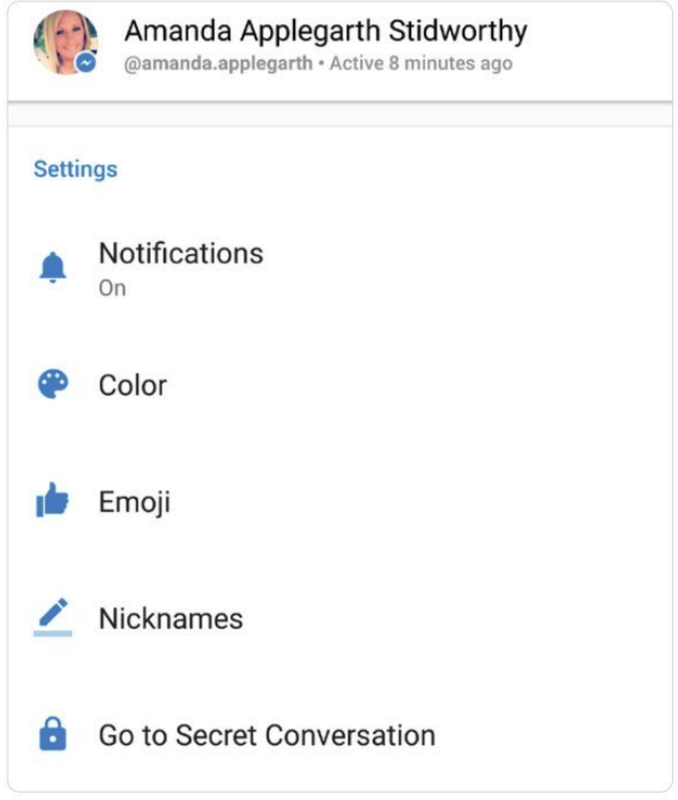
5 There are various sections, including Active Now and Favourites. These can be hidden using the menu button beside the section title. Tapping any image will open a conversation with that person. You can tap the New Message button at the bottom right and then choose a contact to message.



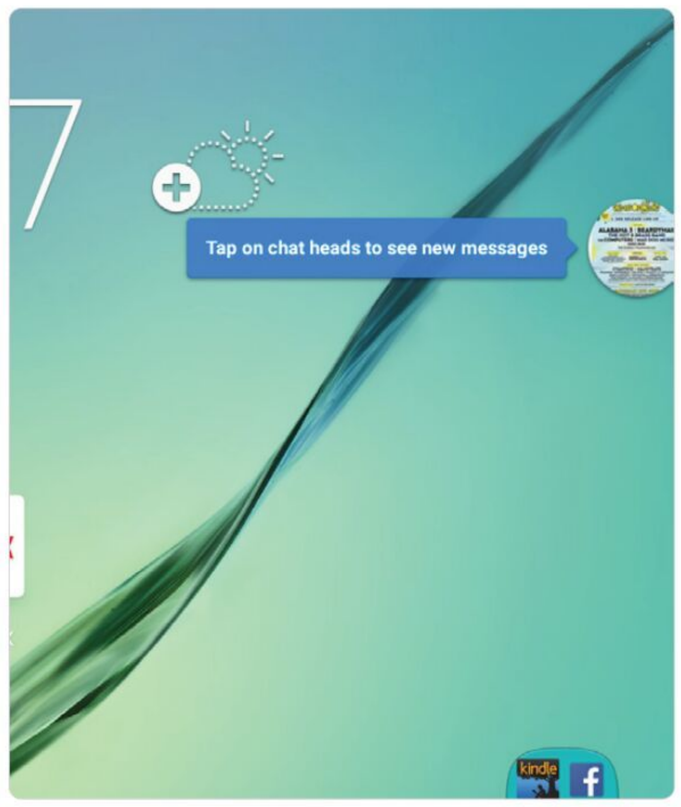
6 At the bottom of the Messenger main screen, you will see the main control tabs. These take you to Calls, People (where you find new contacts) and the Information screens. In the middle of the tab bar is a camera button, used for creating your Messenger Day message.



7 Enter a conversation with someone and you will see a familiar style chat window. The icons at the bottom allow you to, from left to right: Text, Take Photo, Add Photo, Add a Sticker, Add a GIF, Record Voice Message and Add Location. The final icon opens a menu of additional message tools.



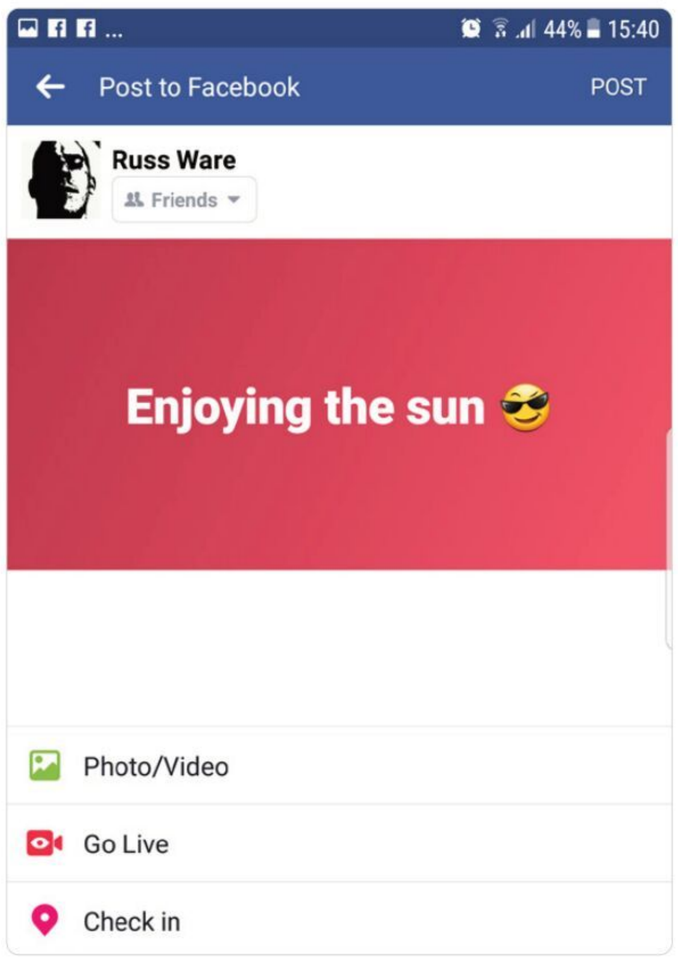
8 You can customise each of your Messenger contacts and conversations individually. Open an existing conversation and tap the (!) icon at the top right of the screen. Here you can change the colour of the conversation bubbles, add a nickname or disable notifications for that contact.



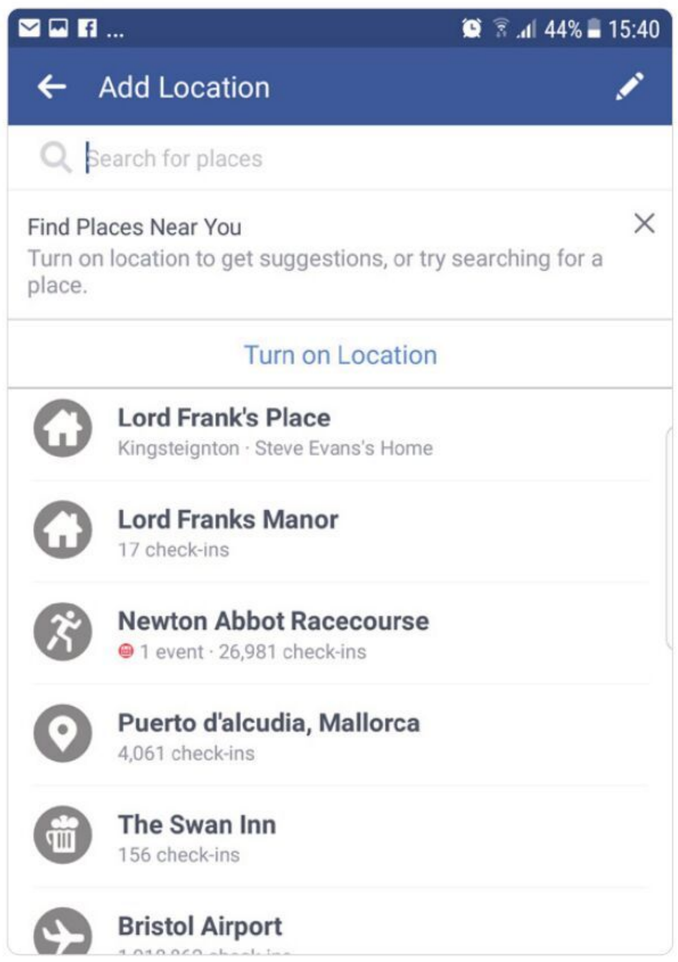
9 Facebook Messenger adds a clever new feature which the old internal chat system didn't have: Chat Heads. These a small circular profile pics, which float on your screen when a conversation is active. Even if you leave Messenger (and Facebook), the Chat Head remains accessible at a tap.

Checking In

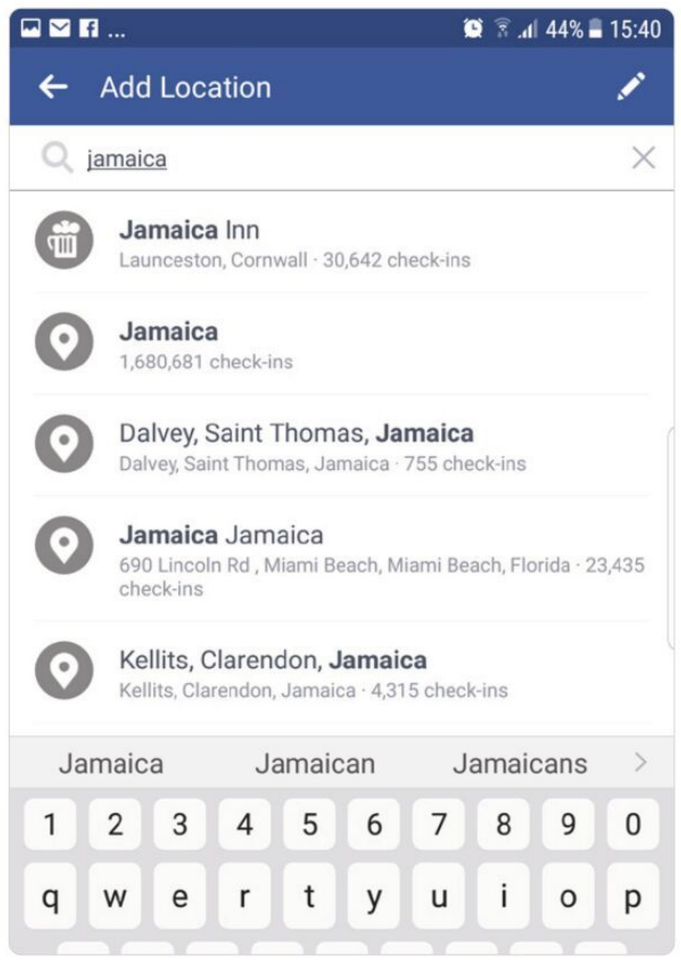
Checking in is a simple way of updating your status to show where you are. Check-in's can either be places you have visited before, or you can create new ones as you need them.



1 Open the Facebook app and tap the 'What's on your mind?' box at the top of the screen. You can type a status update if you wish, or simply tap the Check-in button below the text box. A list of previous locations available to check in to will then be displayed on screen.



2 If you see your current location listed, tap it, and then tag any friends you are with (if you wish) on the next screen. You can skip this step using the button at the top of the screen. You now simply need to tap the Post button to update your status with the check-in.



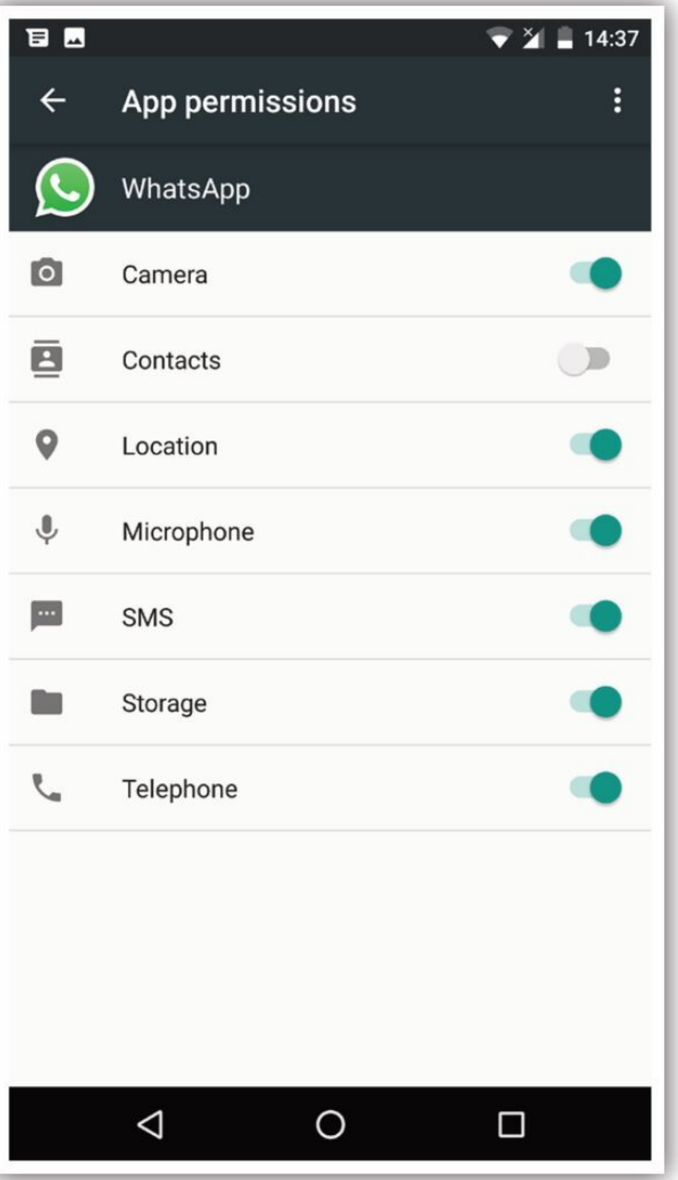
3 If you don't see your required location in the check-in list, you can add one there and then. Tap the search field at the top of the list and type the name of the location. If it already has a check-in logged (by someone else), tap it. If not, at your home for example, you will be able to enter one.

Get Started with WhatsApp

WhatsApp started as an alternative to SMS but now supports sending and receiving a variety of media, including text, photos, videos, documents and locations, as well as voice calls. WhatsApp messages and calls are secured with end-to-end encryption, meaning that no third party including WhatsApp can read or listen to them. This makes it the perfect choice for your private and personal conversations.

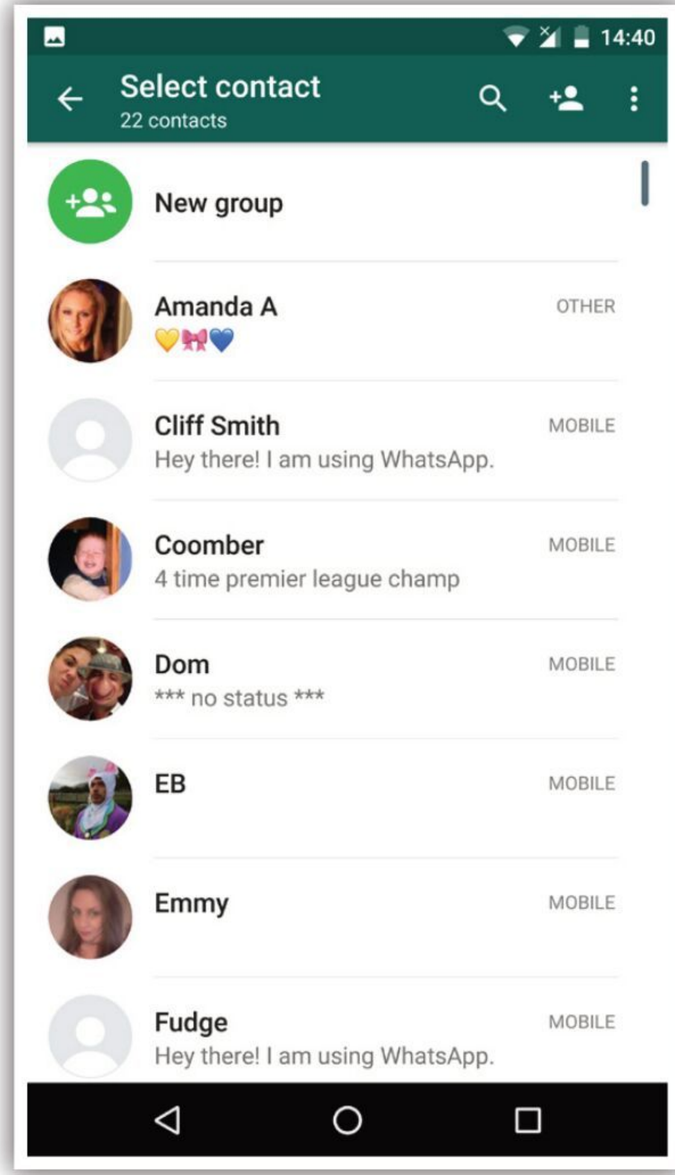
How to Chat on WhatsApp

WhatsApp is a very popular chat platform and not just because it is secure and private. There are dozens of features to explore but here are the most important tools and functions.



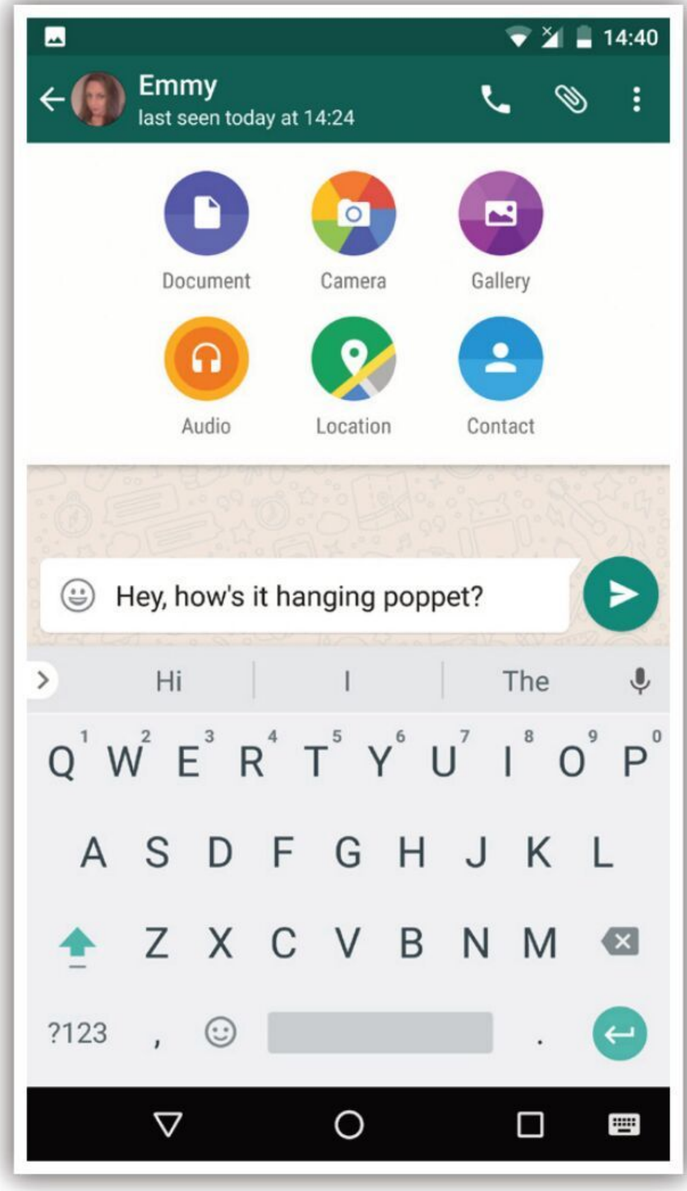
Adding Contacts

WhatsApp quickly and easily recognises which of your contacts are using WhatsApp by accessing your phone's address book. If you can't see your contacts, make sure you have allowed WhatsApp to access your phone's contacts in your phone's Settings (Settings > Apps > App Permissions).



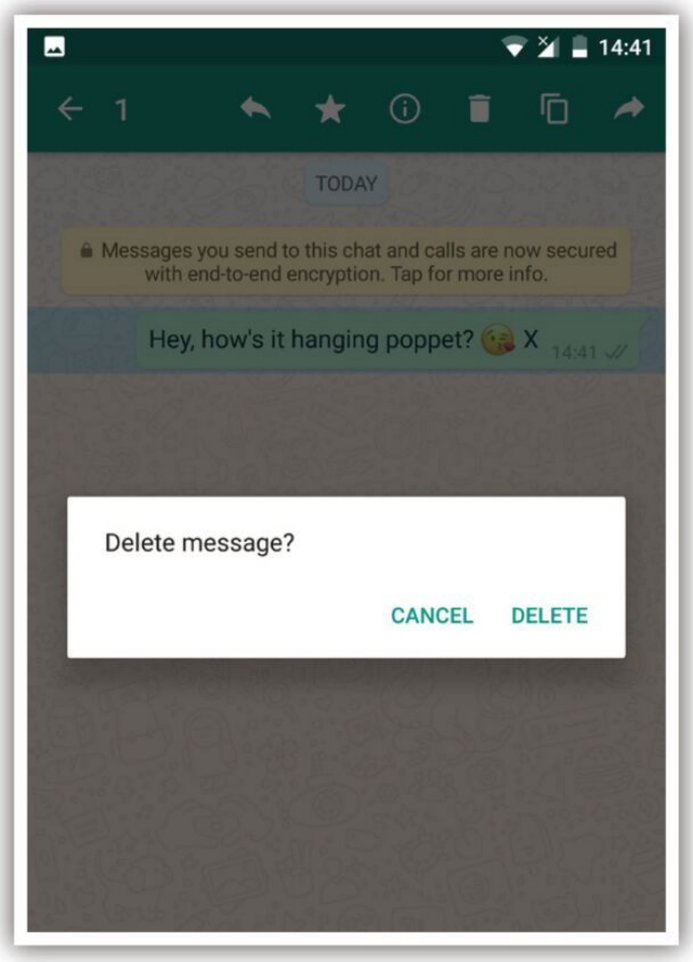
Start a Chat

Assuming this is a fresh install of WhatsApp, you won't have any conversations listed under the Chats tab. Instead, tap the New Chat button at the bottom right and choose a contact from the list that opens. For a group chat, tap the New Group option at the top and then choose contacts to invite to the chat.



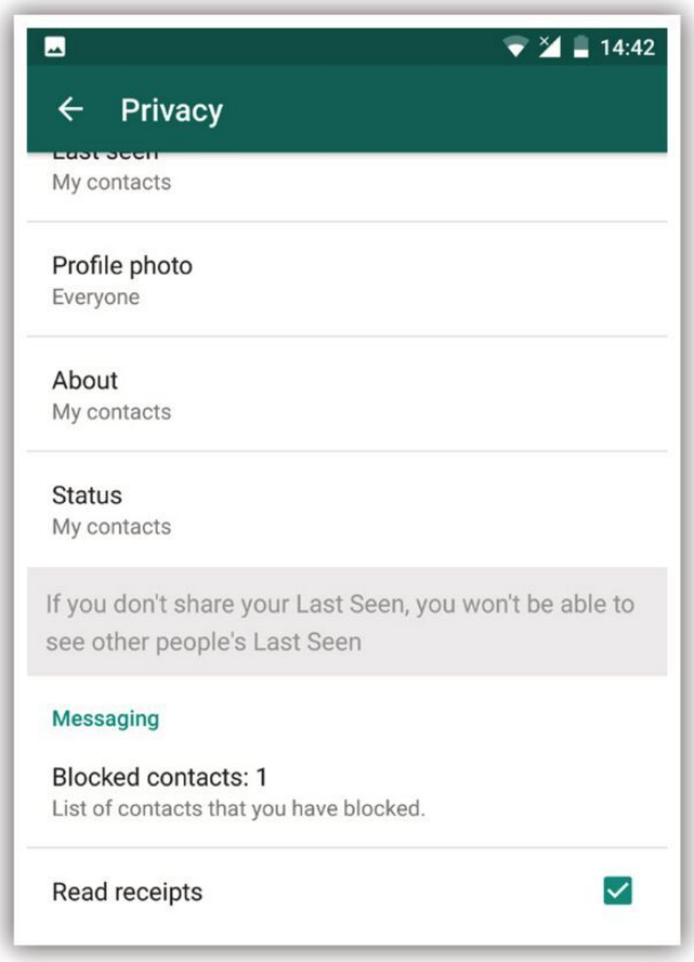
Chat Tools

During a chat you can use several tools to add content. The smiley face icon in the text box lets you add various emoji and the camera lets you add or take a photo. Tap the paperclip icon at the top to attach a document, photo, recording, location or a contact to a message. Tapping the phone starts a VOIP call.



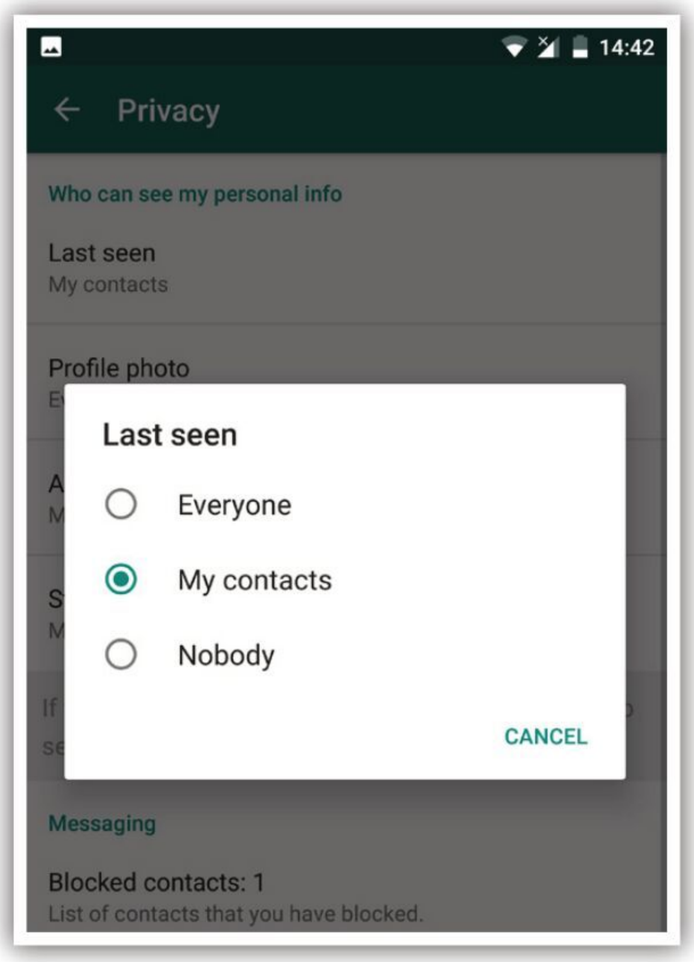
Deleting Messages

Open WhatsApp and go to the chat containing the message you wish to delete. Tap and hold the message and then tap the Trash can icon on top of the chat screen and select Delete. Optionally, you can tap several messages to delete multiple messages at the same time.



Blocking Contacts

You can stop receiving WhatsApp messages, calls and status updates from certain contacts by blocking them. Tap the Menu Button > Settings > Account > Privacy > Blocked contacts. Tap the add contact icon and then select the contact you wish to block from the list.

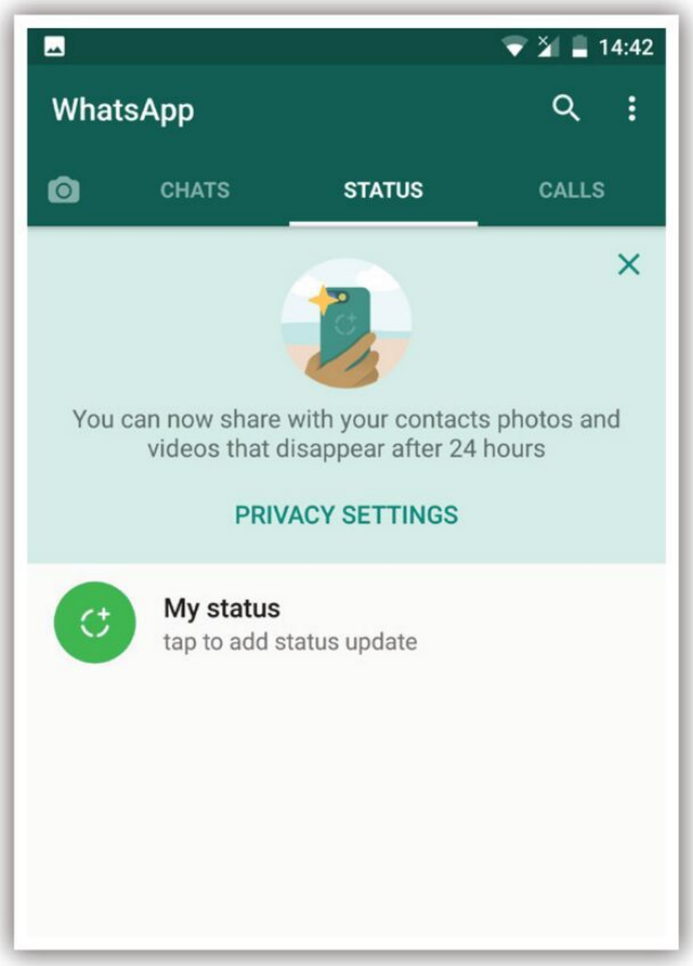


Privacy Settings

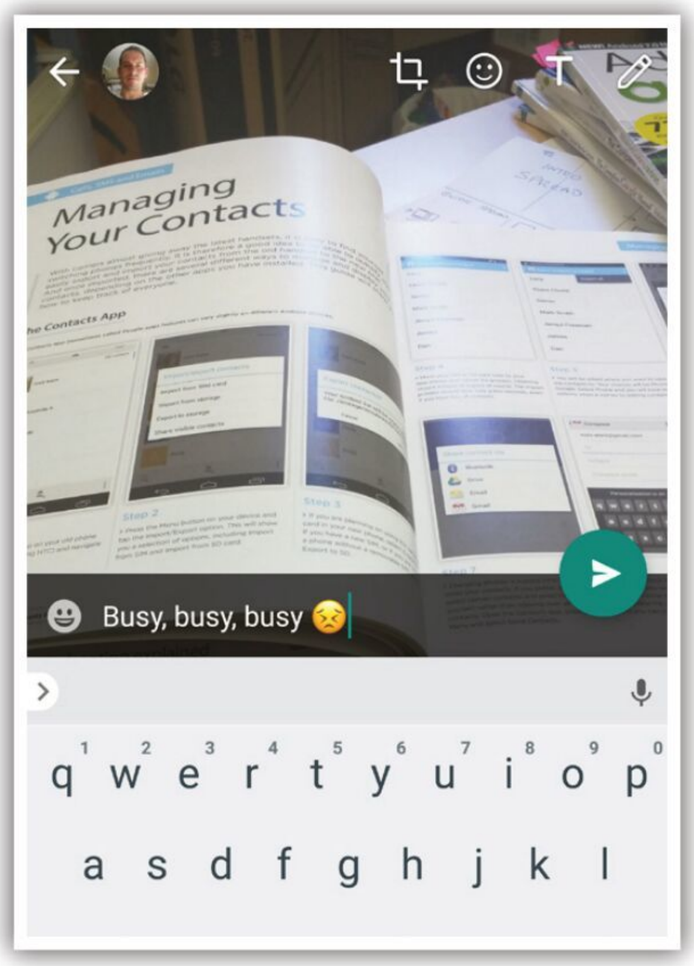
By default, any WhatsApp user can see your read receipts, last seen status, about info and profile photo. Your contacts can also see your status. To change these settings, go to WhatsApp > Menu Button > Settings > Account > Privacy. If you don't share 'Last seen' you won't see it for your contacts.

Using WhatsApp Status

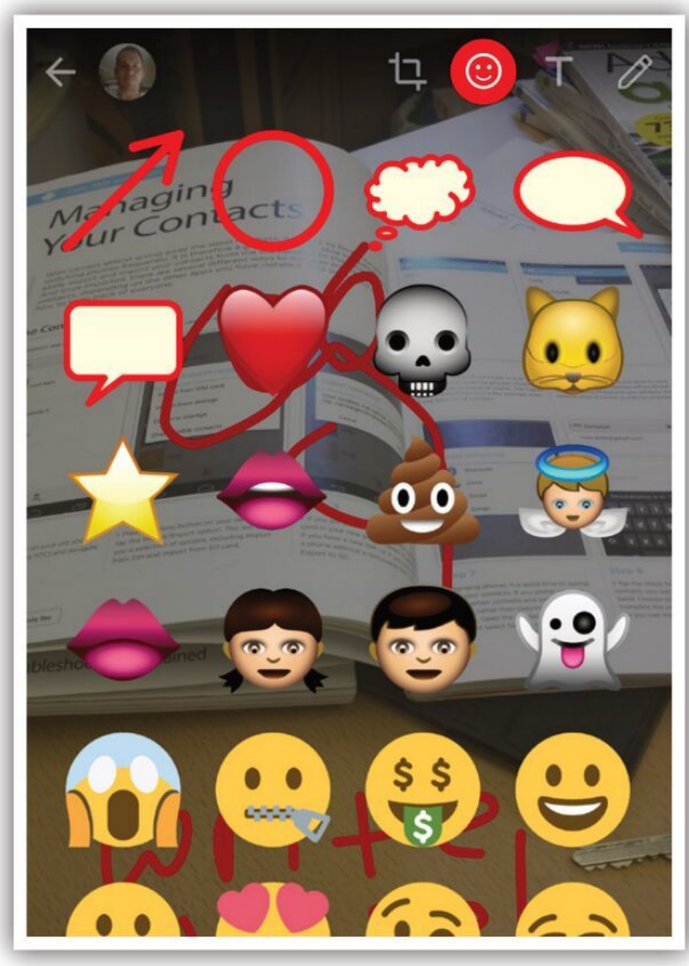
WhatsApp Status allows you to share photos, videos and animated GIFs that disappear after 24 hours. It's a bit like Snapchat Stories but with a WhatsApp twist.



1 In order to send and receive status updates to and from your contacts, both you and your contacts must have each other's phone numbers saved. To view someone's status update, tap the Status tab and select a contact's status. To reply to one of your contact's status updates, tap Reply at the bottom of the screen.



2 To add a status update, go to the Status screen and tap the status button at the bottom right. You can take a new photo or record a new video or choose an existing one from the picker, then tap the send button. The camera is fairly basic, only allowing you to add a flash or switch to front camera.



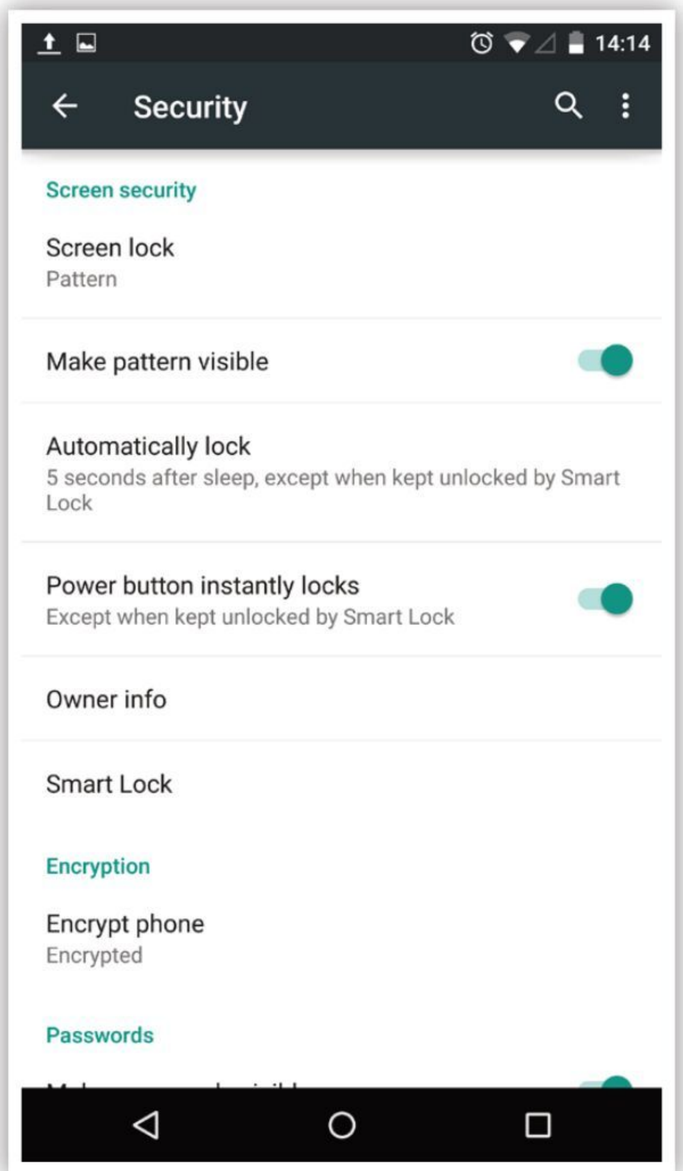
3 However, you can add a caption and personalise your status updates by adding emojis, text and freehand drawings to your photos and videos. The buttons to add emoji's etc., appear at the top of the screen once you have taken or selected the photo or video you want to send.

Android Security Tools

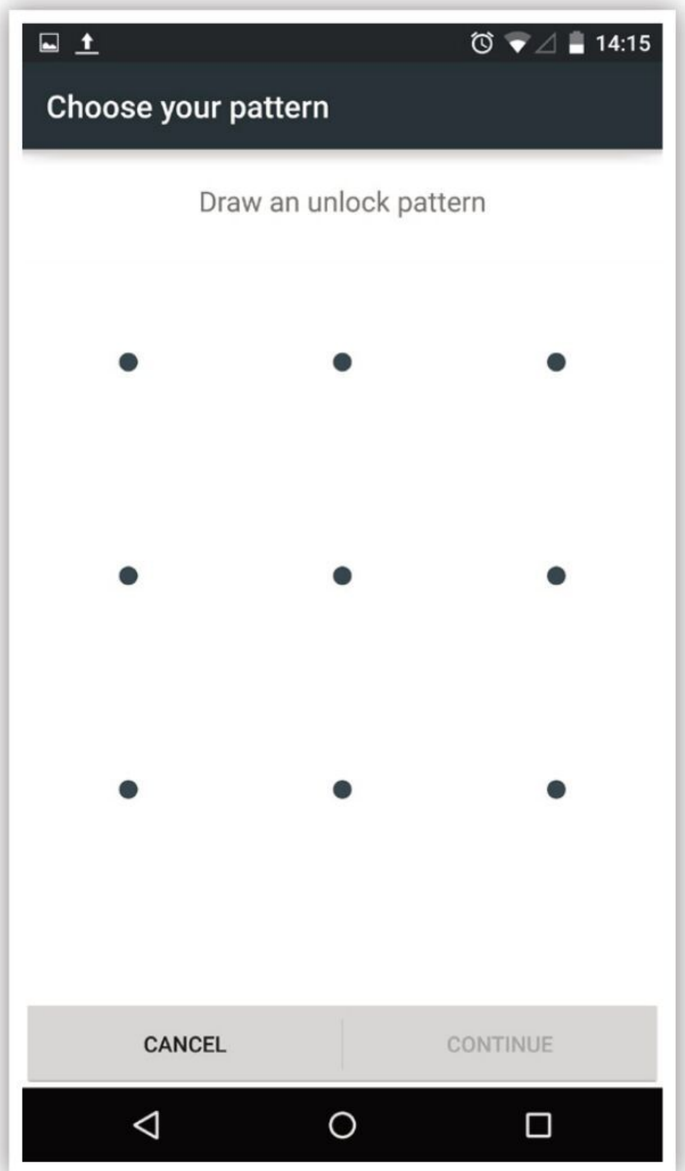
Android has always included lots of security settings and tools, from screen locks to SIM card encryption. The Lollipop update has further enhanced device security by introducing Smart Lock, Trusted Agents and Screen Pinning, as well as Guest accounts. As you begin to add more and more personal data to your Android device, you should focus more on these security tools and features.

Activate Smart Lock

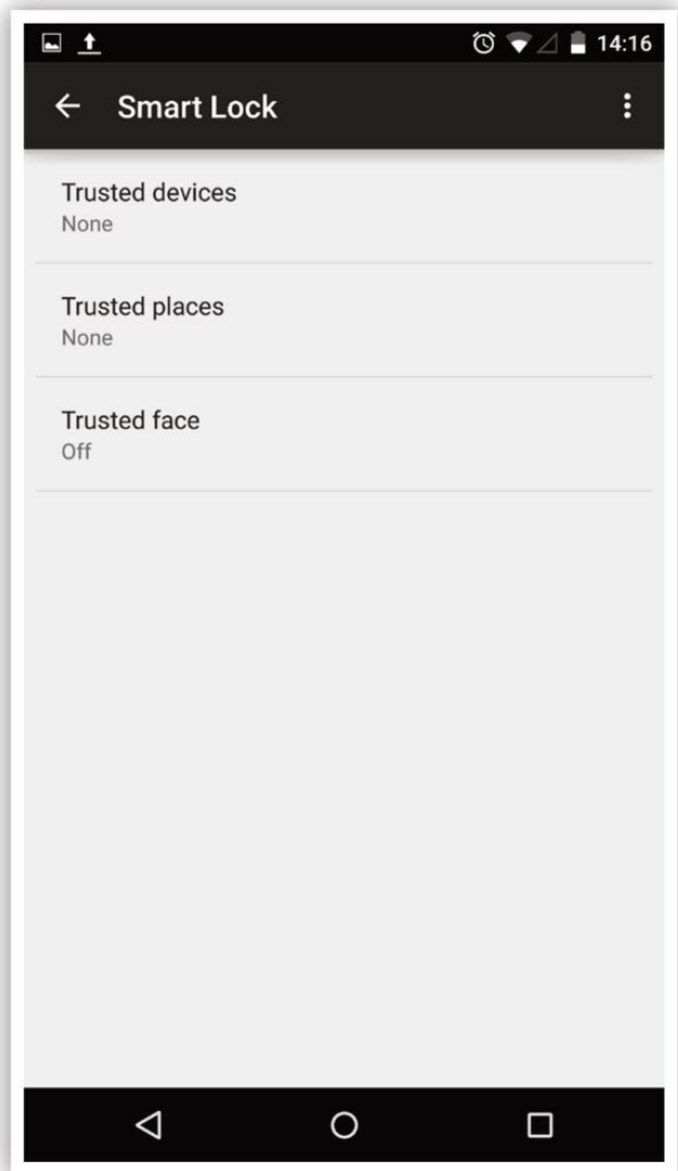
Smart Lock is a new addition to Android, which allows the use of several further locking and security options. Without enabling Smart Lock first, you will not be able to use many of these tools.



1 As mentioned, Android features lots of different security settings and more are being added with every update and new version of the OS. All of the system security settings are accessed in Settings > Security. Scroll to the bottom of the Security settings and you will see Trust Agents under the advanced heading. This is where you enable Smart Lock.



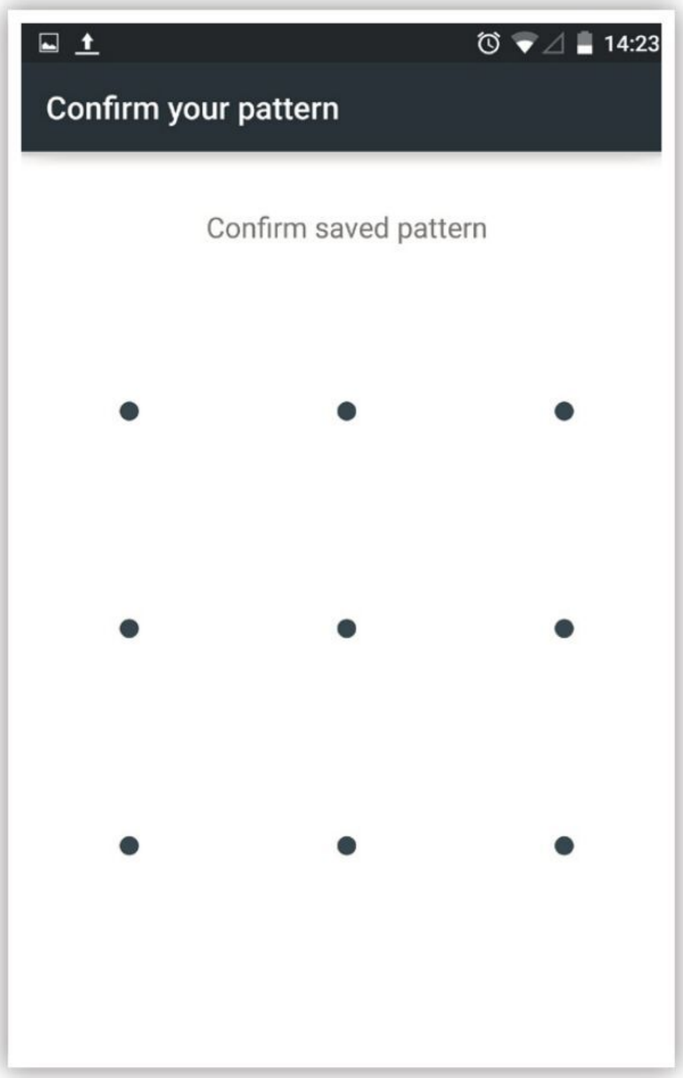
2 Before you can use Smart Lock, you will need to set up a screen lock on your device. Many of the additional security features in Android require this. Your choice of screen lock must be Pattern, PIN or Password to use Smart Lock. Find the setting and follow the instructions. You can read more about the screen lock elsewhere in this magazine.



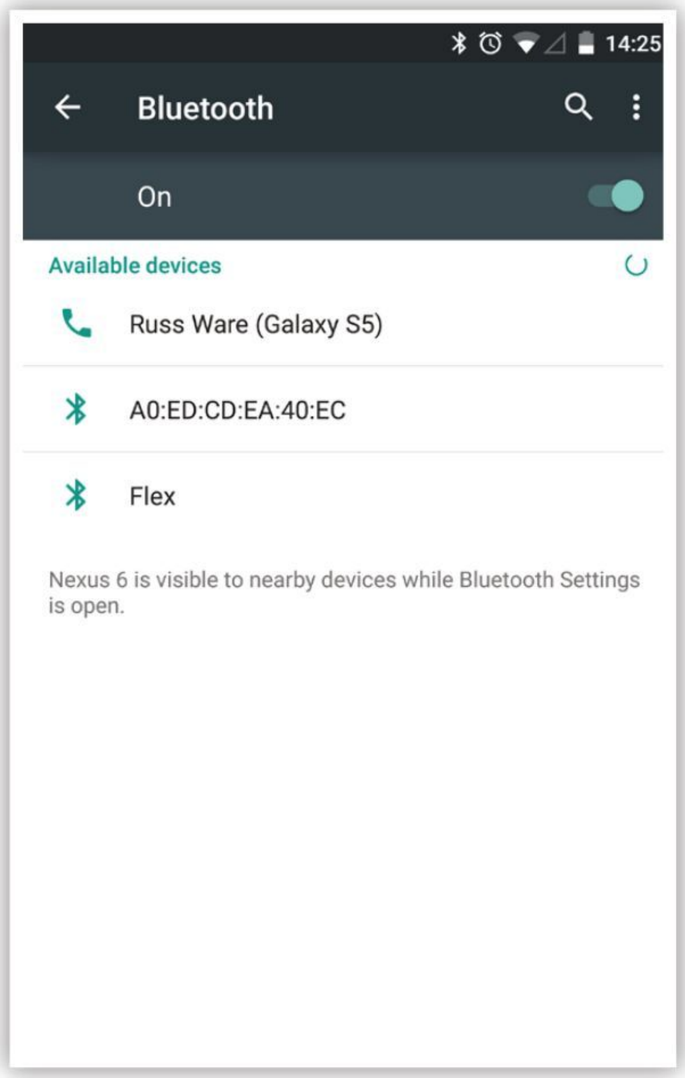
3 You need to enter your screen lock code when you want to change your Smart Lock settings. If you've turned off Smart Lock in the past, turn on now. In the Security menu under Advanced, tap Trust Agents and make sure that Smart Lock is set to On. With Smart Lock now activated, you can begin to set up and use the other security features.

Trusted Devices and Places

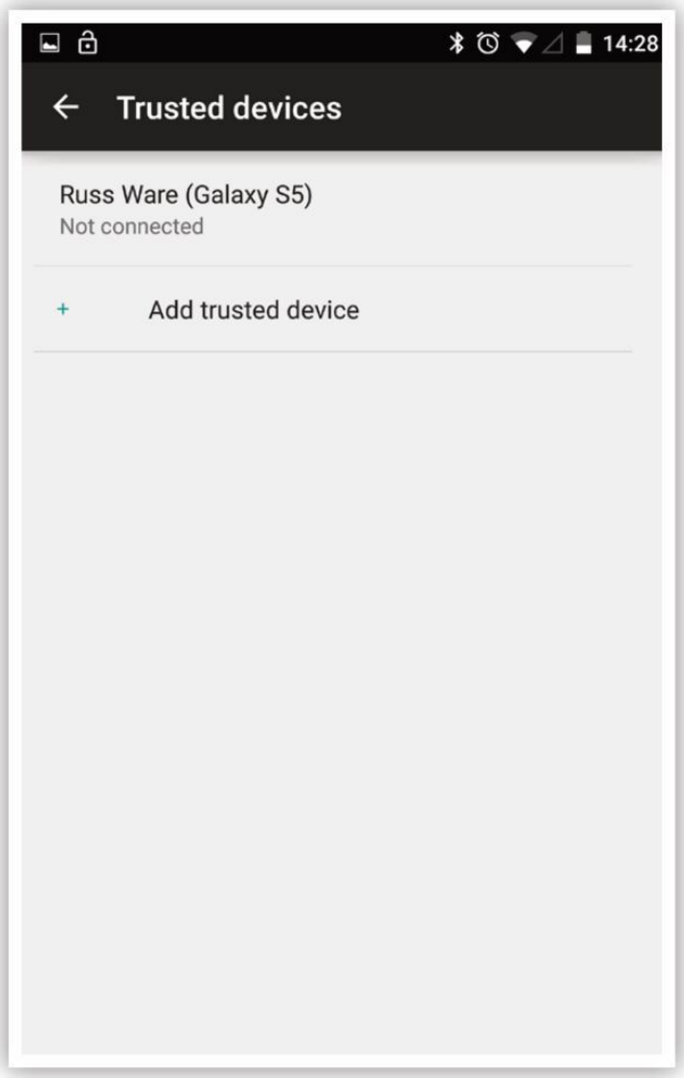
With Smart Lock turned on, you can now start to add those devices, places or even faces that you trust.



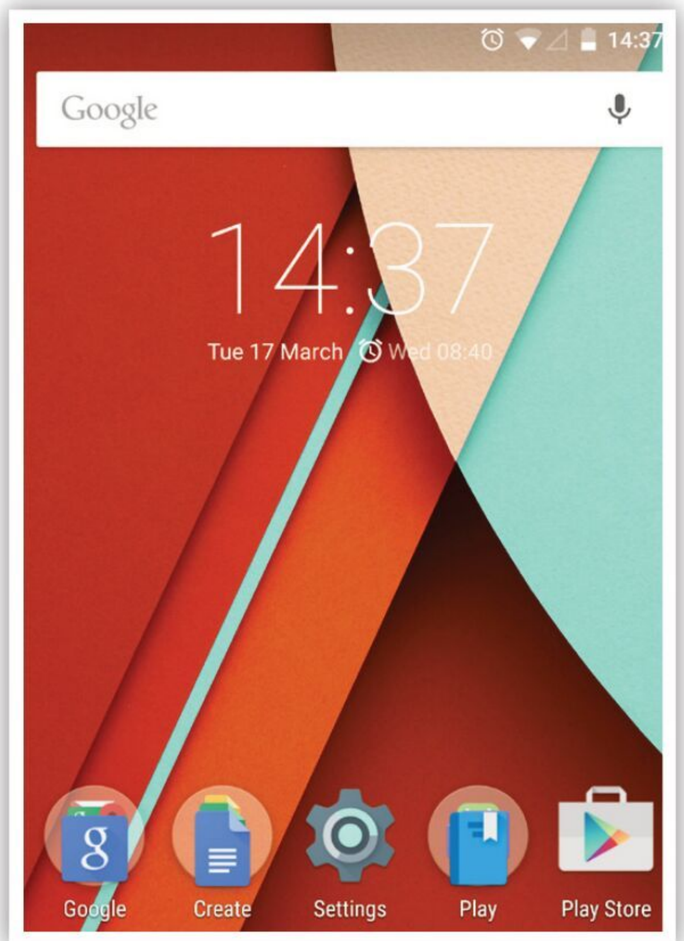
1 To set up a trusted device or trusted place so that your device will automatically unlock, open your device's Settings menu > Personal > Security and tap Smart Lock. Enter your pattern, PIN or password on the next screen.



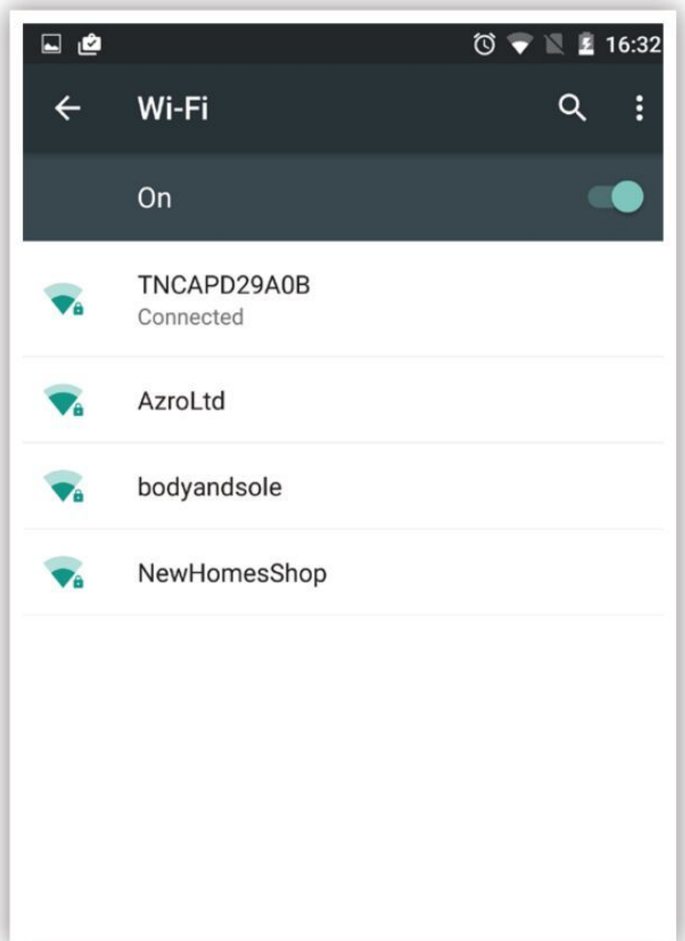
2 You can choose a trusted device, such as a Bluetooth watch, fitness tracker, or Bluetooth headset, to keep your phone unlocked whenever that device is connected. You have to pair your Bluetooth device before you can make it a trusted device.



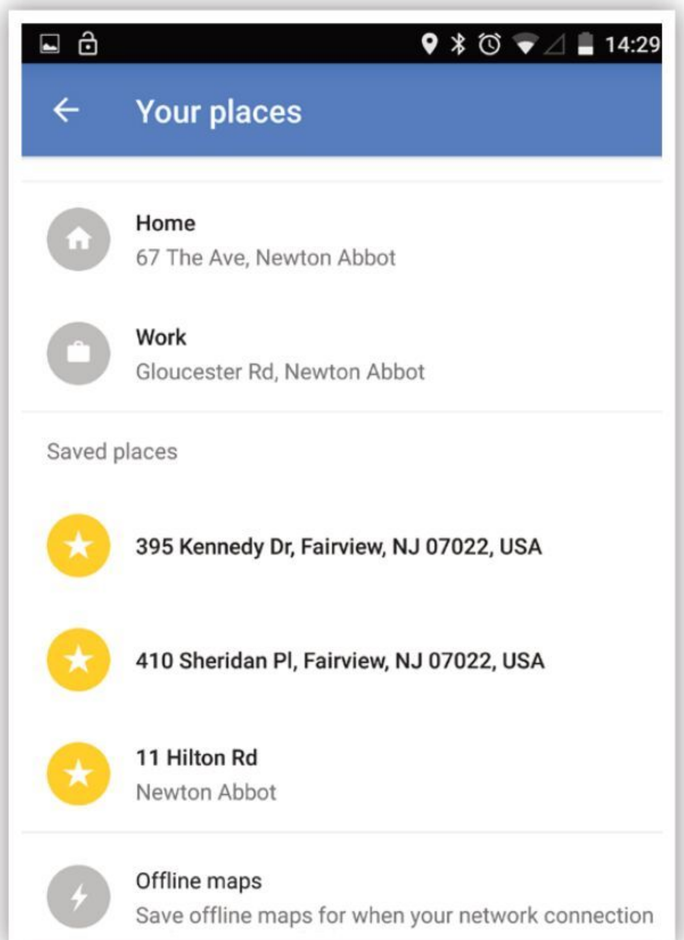
3 On your phone or tablet, make sure that Bluetooth is turned on. In the Smart Lock menu, tap Trusted Devices. Tap the Add icon, and then choose Bluetooth. Touch a device to select it from the list of connected devices. Only paired devices will show in this list.



4 When your device is connected to the Bluetooth device, it will automatically unlock. To remove a trusted Bluetooth device, select it from the list of trusted Smart Lock options in the Trusted Devices menu.



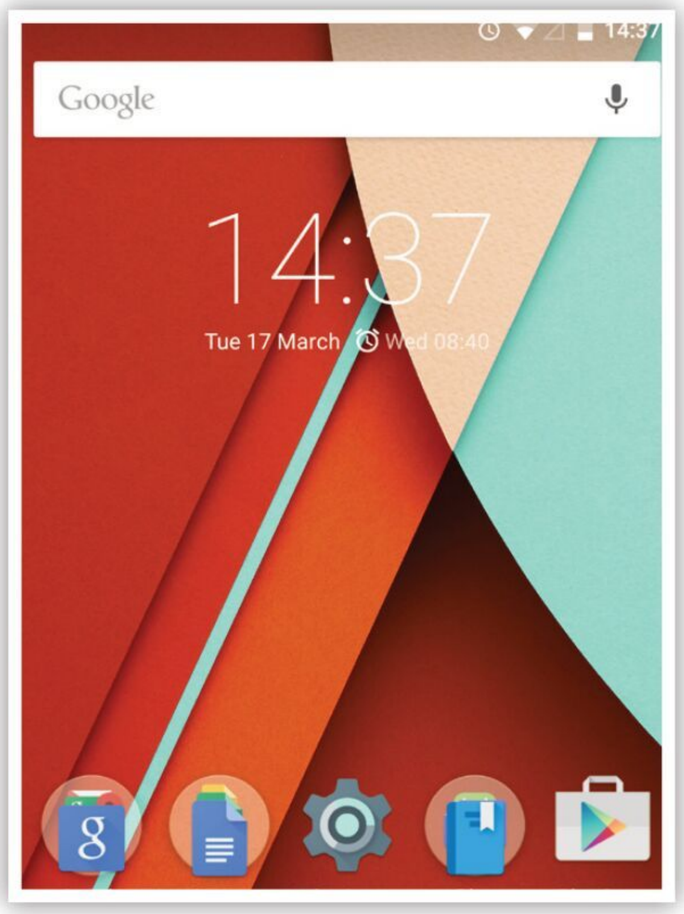
5 To add your home or workplace as a trusted location, in the Smart Lock menu, touch Trusted Places. Move the switch next to Home or Work to the On position. You need to have an Internet connection and allow your phone to use your location for your trusted places to work.



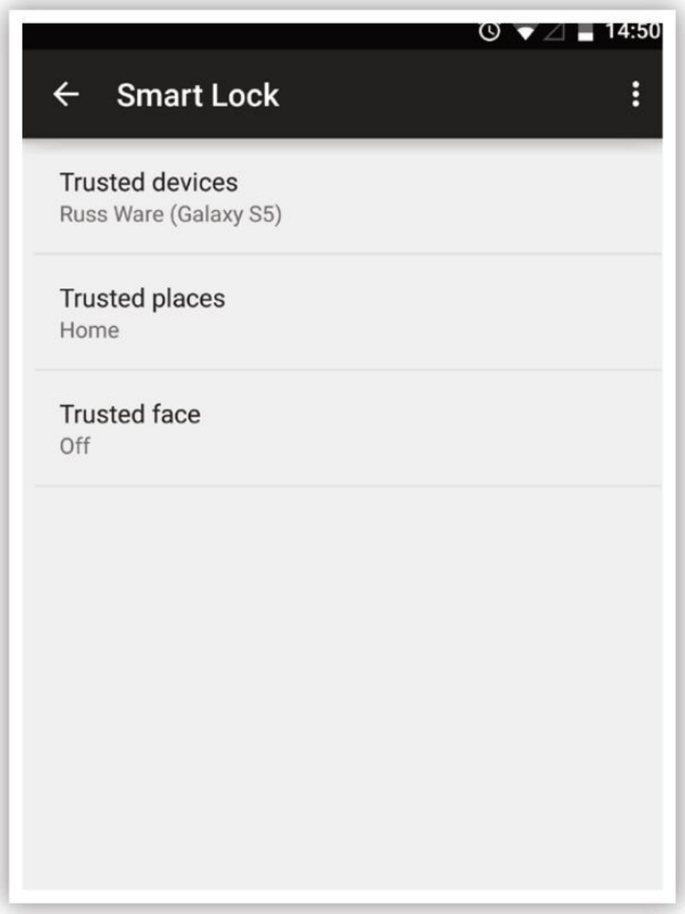
6 To edit your home or workplace, open the Google Maps app on your device and sign in. Tap the Menu button, then select Settings > Edit Home or Work. Update the information and tap the tick mark. To remove or edit a customised place, move the switch to the Off position.

Trusted Faces

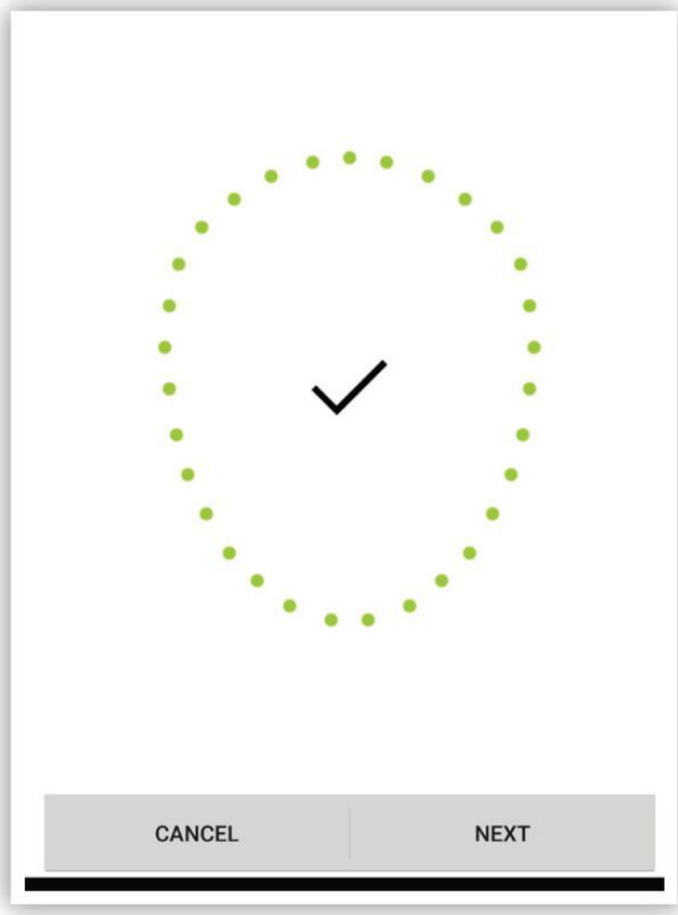
Although contained in the same menu, Trusted Faces works differently to Trusted Places or Devices.



1 You can have your device unlock when it recognises your face. After setting a trusted face, every time you turn on your device, it will search for your face and unlock if it recognises you. The data used to recognise your face is only stored on your device.



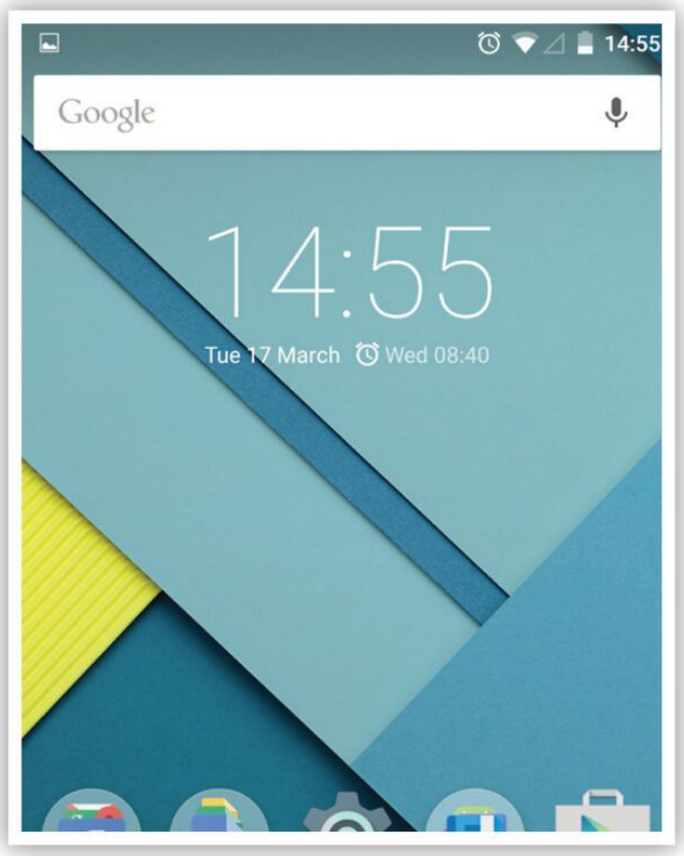
2 To set a Trusted Face, open your device's Settings menu. Open the Security menu and, under Screen Security, tap Smart Lock. Enter your pattern, PIN, or password. Tap Trusted Face, read the disclaimer message and then tap Set it Up.



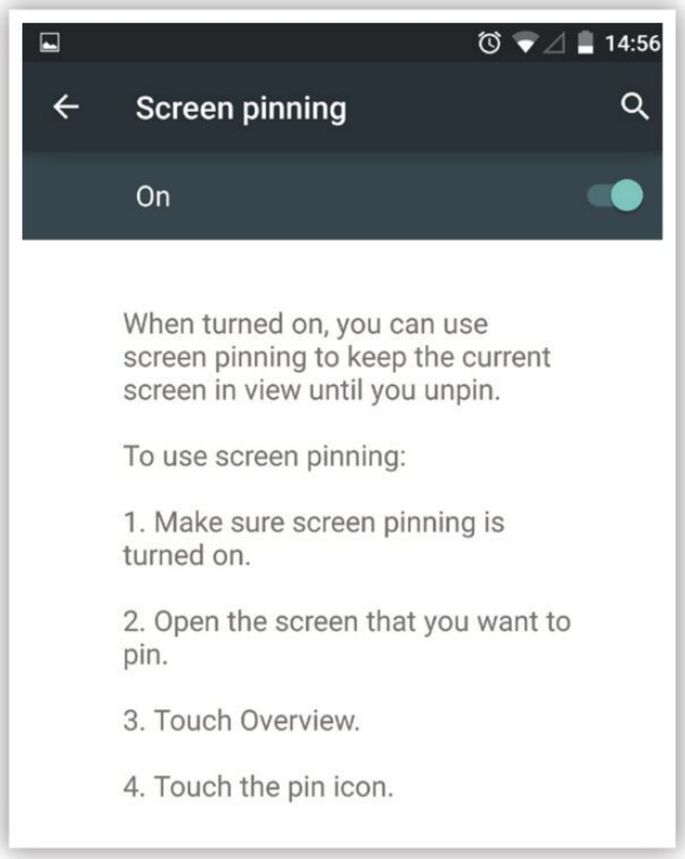
3 Face Unlock captures an image of your face during setup, which is then used as a template to match to when trying to unlock using Trusted Face. With this in mind, it is best to set this feature up whilst indoors, in a well lit room. Follow the instructions to complete setup.

Screen Pinning

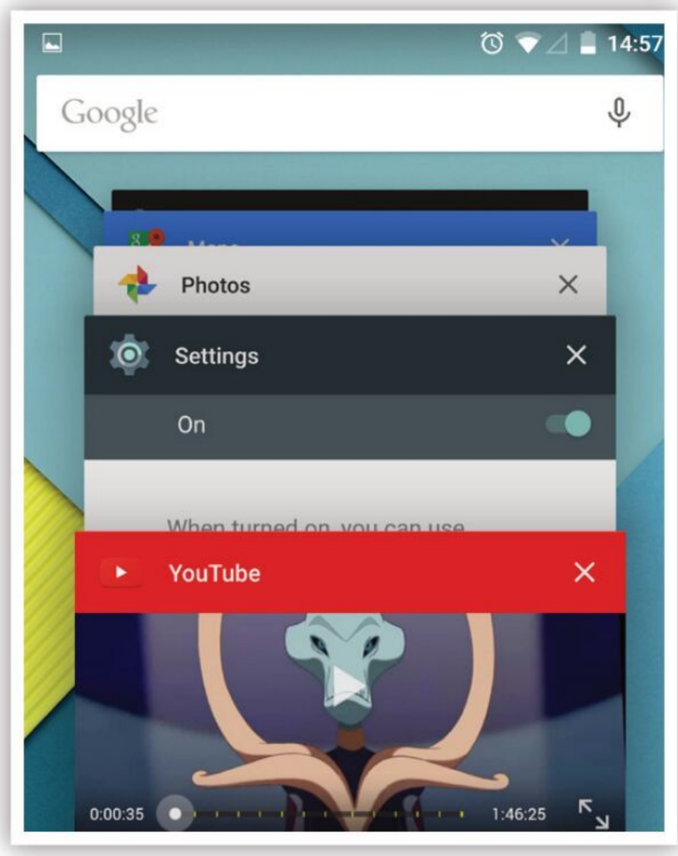
Although part of Android 5.0, Screen Pinning might not be available on all devices running the OS.



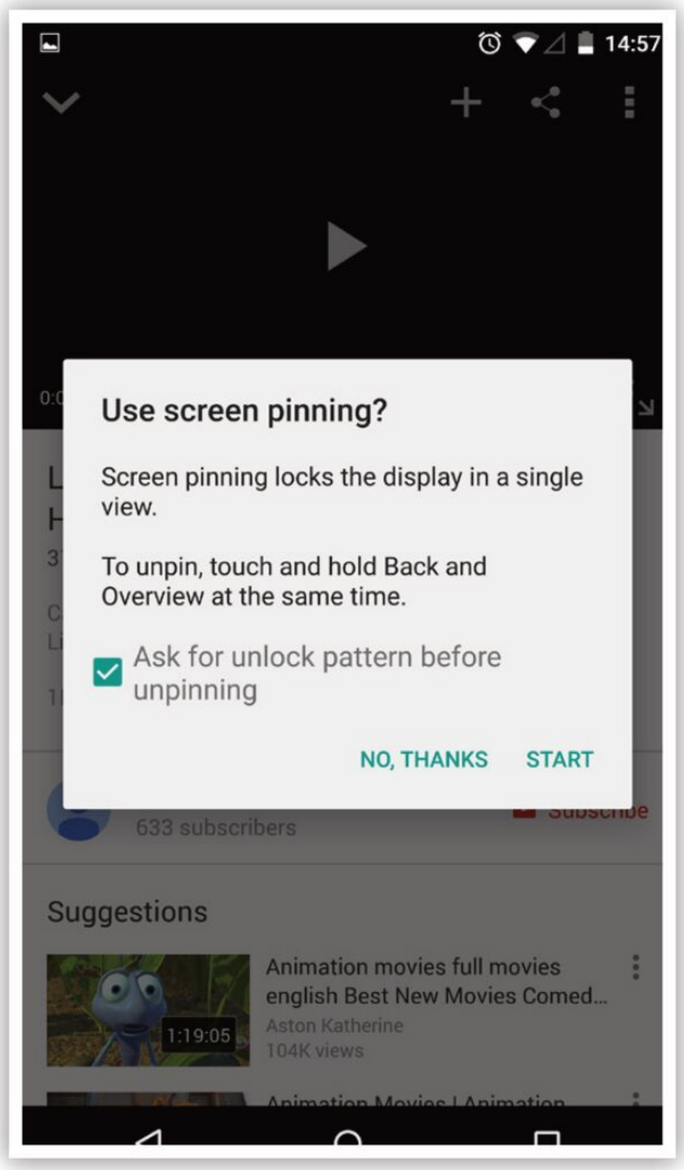
1 Screen Pinning enables you to lock your device on a specific app or screen. This is useful when allowing someone to watch a movie, for example, without allowing them access to anything else on the device. It's perfect for when you're sharing your device with children.



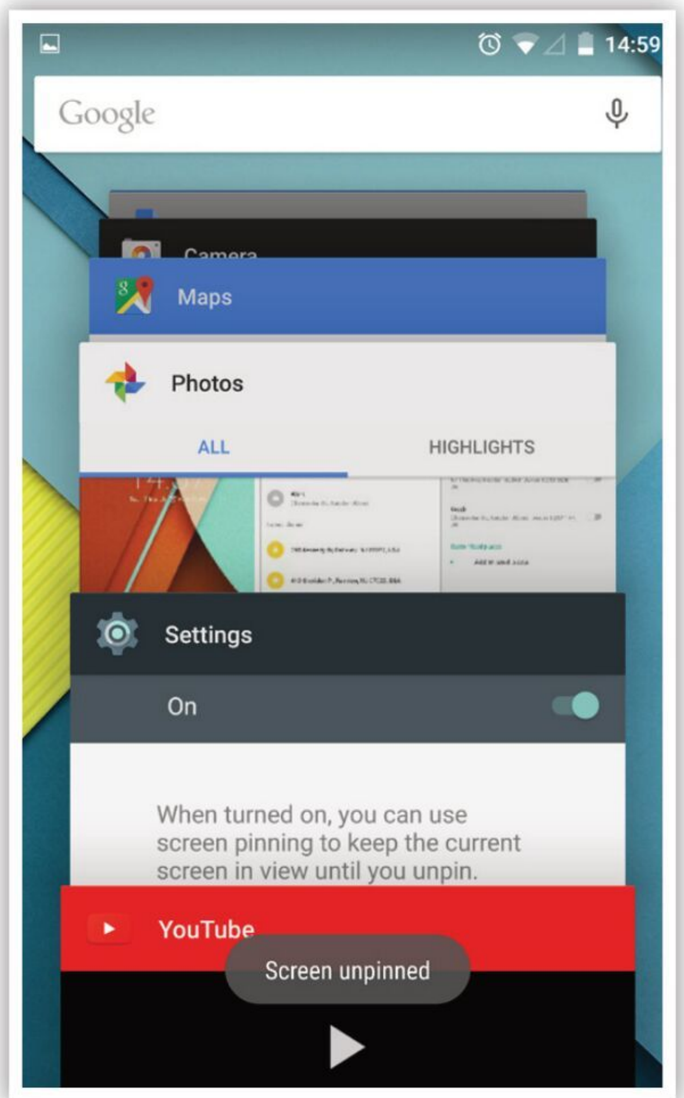
2 To enable Screen Pinning, open Settings > Security, and look in the Advanced section. Tap Screen Pinning and use the slider to turn the feature On. If you can't find the Screen Pinning option in the Security menu, check whether the feature is available with your device.



3 Now open an app and go to the screen you want to pin. Tap the Overview button (you might know it as the Recent Apps button) on your device. Swipe up to reveal the pin icon on the bottom-right corner of your selected screen. Tap the pin icon.



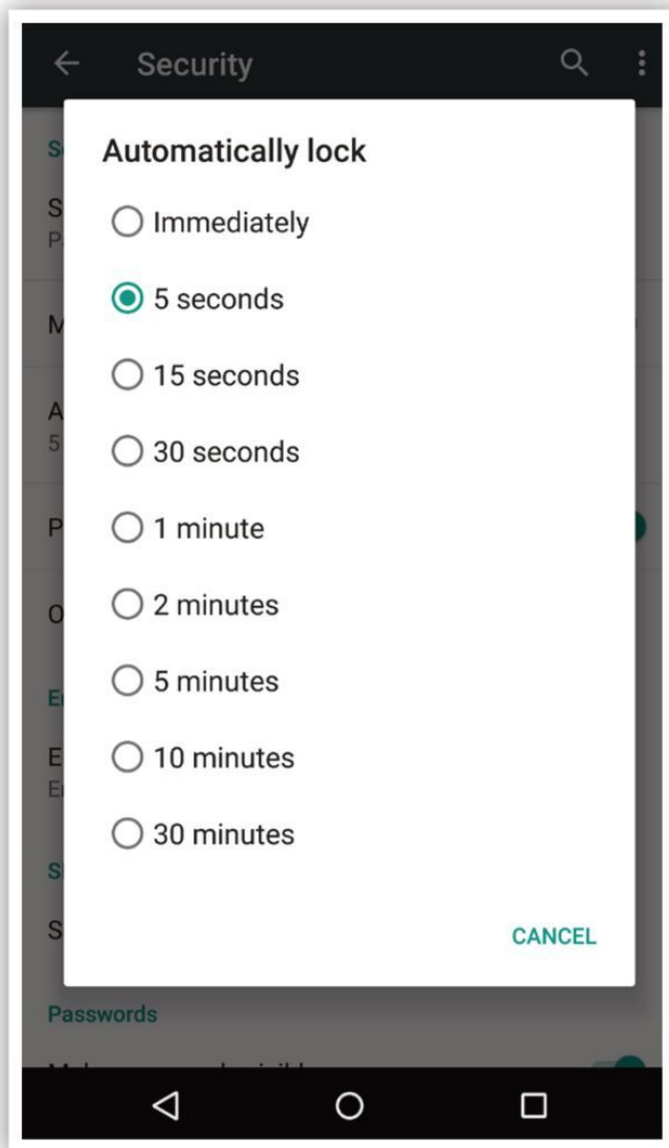
4 If you want the lock screen to appear after an app is unpinned, check the box next to Ask for Unlock Pattern Before Unpinning. Finally, tap Start to pin the screen. You can now hand the device over to someone else, knowing that they can't snoop around.



5 To unpin the screen, tap and hold Overview and Back at the same time. Release both buttons and the screen will be unpinned. If you required that the lock screen show after an app is unpinned, you will need to enter your pattern, PIN, or password to finish.

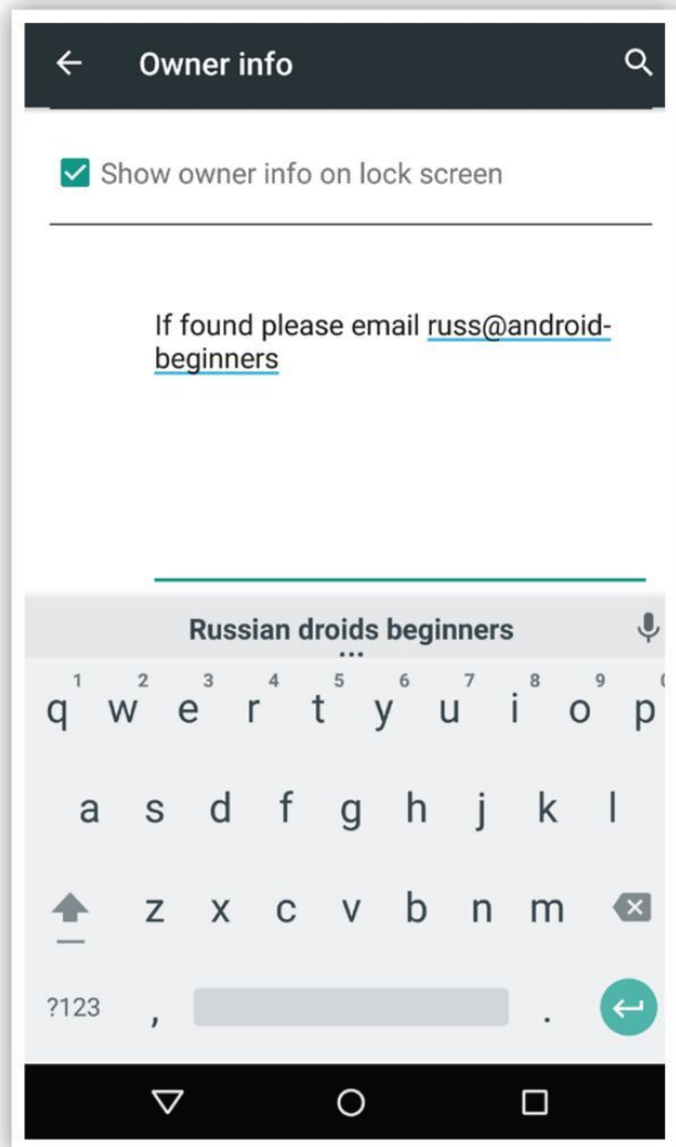
Little Used Security Tricks

Adding a screen lock is a must, as is using Guest accounts if you let someone borrow your device. But there are several other simple security features which many users overlook.



Automatic Lock

This setting means that once your phone screen is turned off, the screen lock you have set up is instantly applied. It can be set to 5, 15 or 30 seconds, but this will make your device vulnerable if you put it down after turning off the screen.

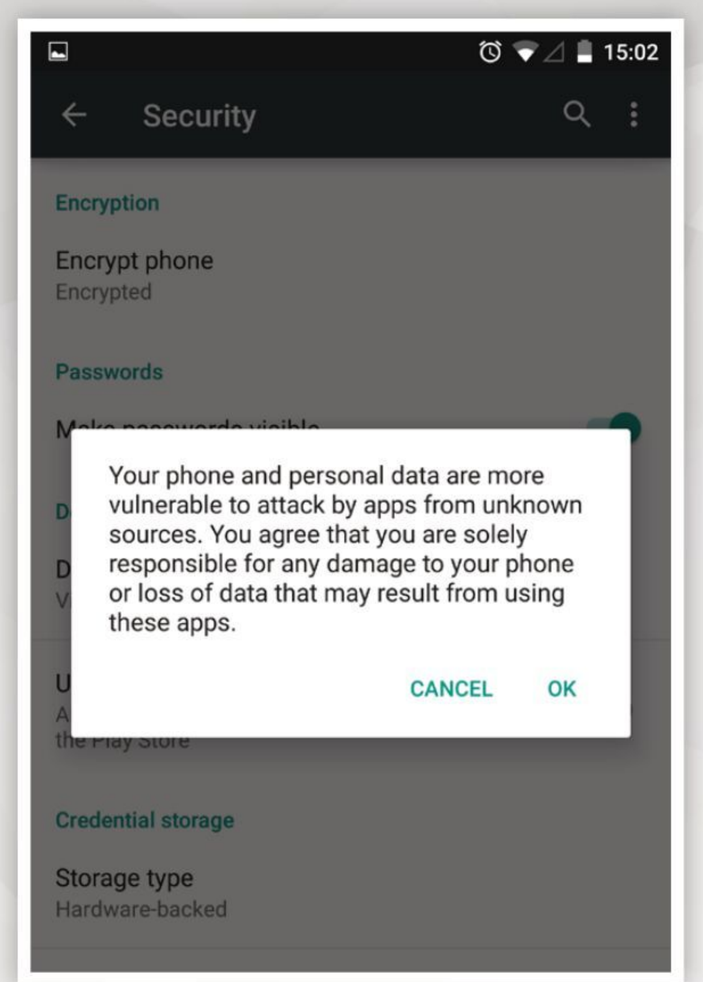


Owner Information

The Owner Information option allows you to write a message which will appear on the lock screen. This allows you to give anyone finding your lost device a phone number or other contact detail, without them needing the device to be unlocked.

Verify App Downloads

If you choose to allow the installation of apps from unknown sources and install from sources other than Google Play, it's more likely that these apps could harm you or your device. If you allow the installation of apps from unknown sources, the Verify Apps feature protects you by continually checking your device to make sure that all apps are behaving in a safe manner, even after they've been downloaded.



Boosting Android Performance

Remember when you first used your new Android phone or tablet and it ran quickly and smoothly? If you have had your device for more than 6 months, it's a fair bet that it isn't running so well any more. Luckily, there are several simple ways to improve the performance of any Android device, particularly those running newer versions of the OS. By applying some or all of these simple tips you could see a decent boost in stability, frame rate and smoothness.

Choose Widgets Carefully

Widgets are a key part of what makes Android so usable but it is very easy to fill several home screen panels with the ones you find useful. Doing so will almost certainly impact on the running of your device, as each widget uses small amounts of processing power (not to mention battery power).

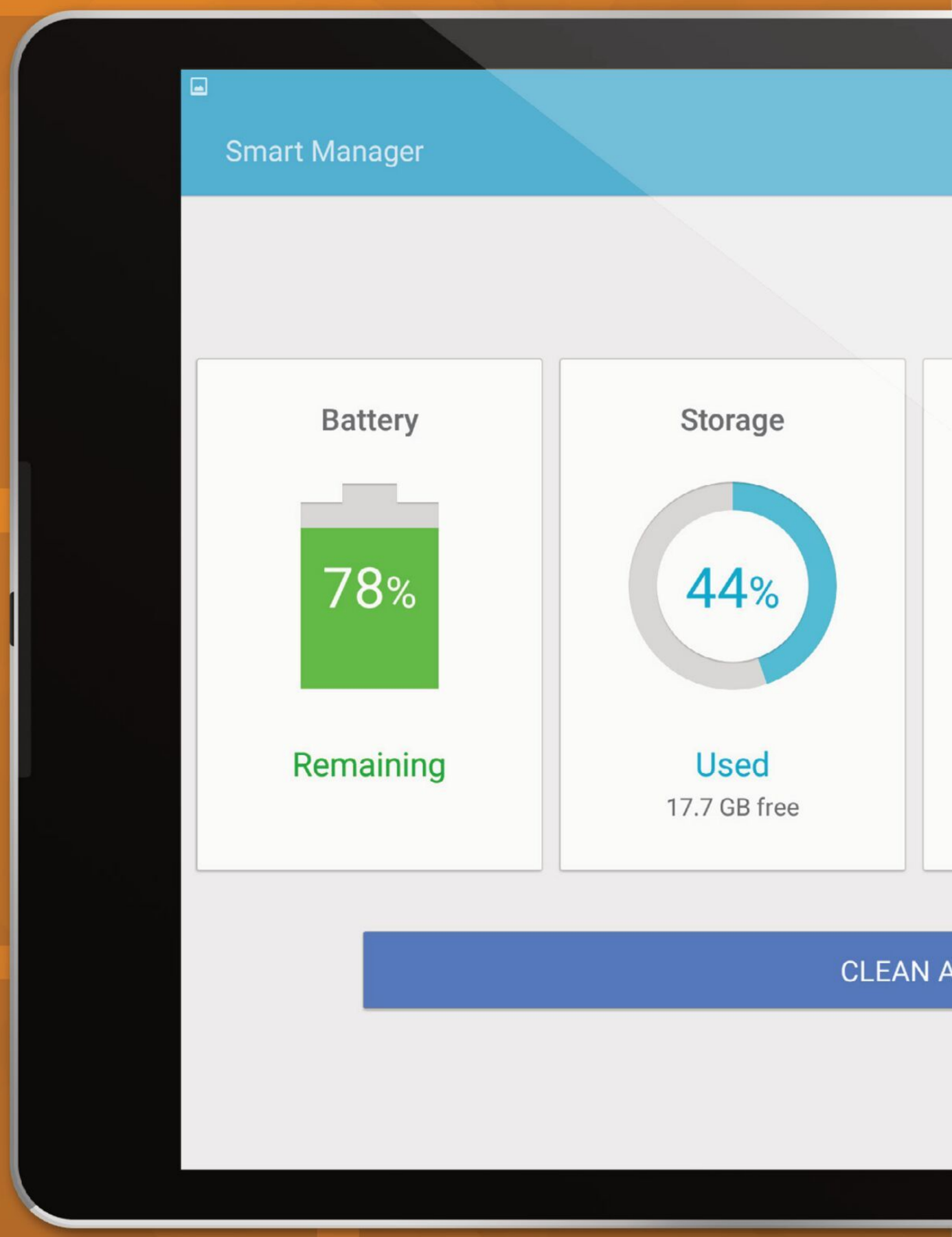
Clearing some of these widgets off your home screens will, in many cases, give you a noticeable improvement in performance. You don't need to strip your home screens back to nothing, just remove those widgets you rarely use or which don't increase usability that much.

Use Device Maintenance

Many devices, including most current Samsung Galaxy phones and tablets, feature a built-in device maintenance tool. These provide a one-click way to clear out old files left behind by apps, clear the cache, scan and clean storage and force apps that are using up device memory to close. You don't need to use these tools every day but a few minutes each week spent using them can make a huge difference, particularly if you install and remove lots of different apps.

Clear the Cache

The more you use an app, the more data is cached to improve that app's performance. Unfortunately, what is good for the app, may not be good for the rest of the device. Deleting the individual caches can be done in the Apps menu (settings > applications) but there are also free apps available in the Google Play store that can automate the process. One of the most popular is Clean Master.



Turn Off Animations

A hidden settings option in Android will give you access to commands you may have never known existed: the Developer Options. Go to Settings > About, scroll down to Build Number and tap it seven times. You will now have access to developer options. Most of the options here should be left alone unless you really know what you are doing but some, including the animation options, can be altered for a potential speed increase. Try turning off animation settings one at a time to see if things speed up on your device.

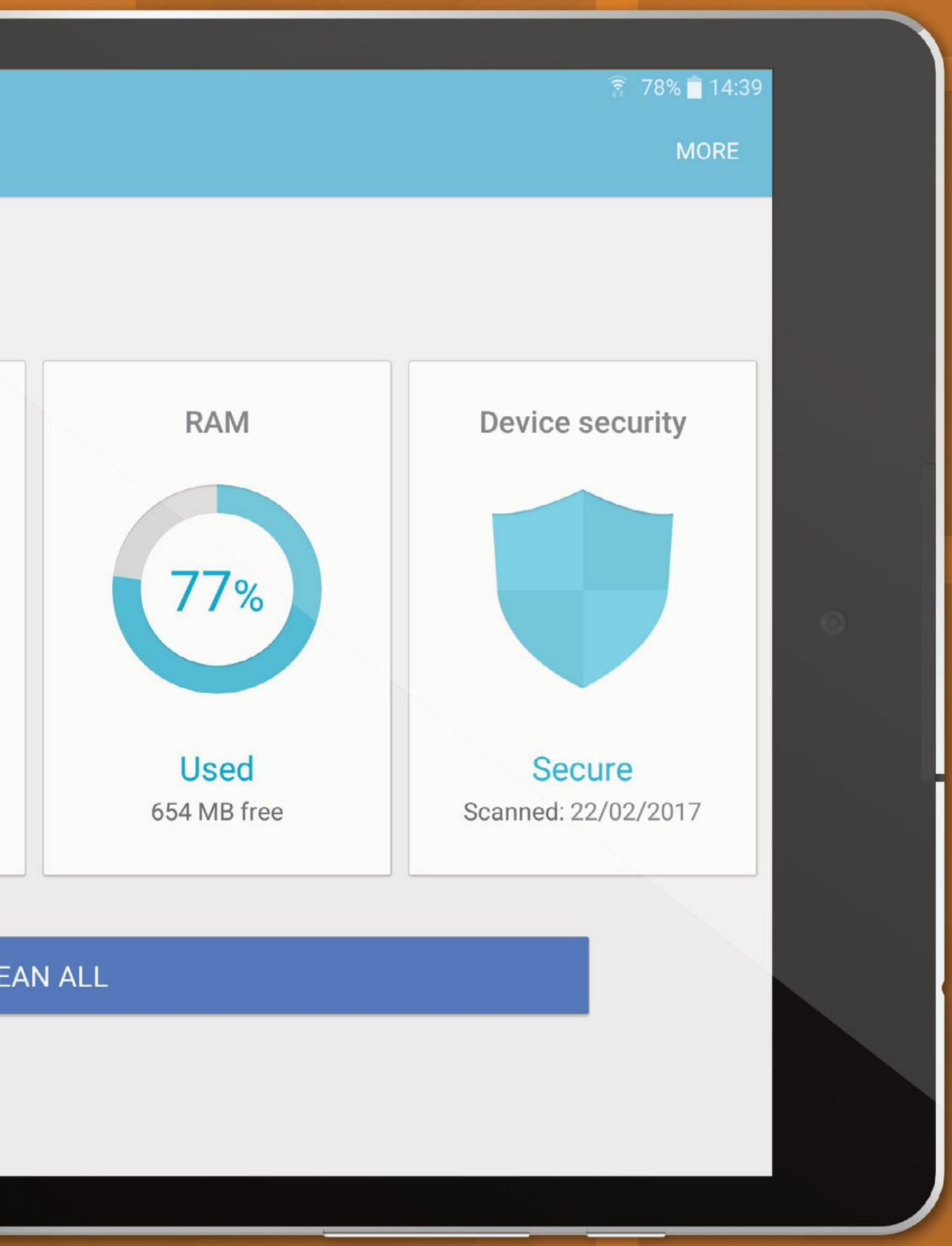
Switch to ART Runtime

Your device might also support the ART runtime environment. If so, switching to it from the DALVIK runtime could provide a considerable performance boost. ART is now a standard feature for all Android versions, and newer devices will likely already be using it. Just as with animation options, you can access this setting via the Developer Options menu. Not all apps can use ART at the moment, so if one of the apps you use is unable to open or you are having trouble receiving a software update, simply switch back to Dalvik mode using the same process.

Clear Out Some Apps

Most apps take up just a few MB of space in your device memory, so most modern Android phones and tablets can handle a lot of apps before they start to run out of space. However, just because you can fit loads on your device, doesn't mean that you should. Having periodic clear outs of apps you no longer need can really help to improve device performance, particularly if the apps you remove are ones which update or work in the background.

To uninstall apps easily, open the main app list (or app drawer) on your device and tap and hold on the one to be removed. Drag and drop it on to the trash can (or uninstall) icon at the top of the screen.



Keep the OS Updated

Make sure that your Android device is up to date with the latest system software releases. Major and minor software updates could include improvements to how the processor handles various functions, and could result in a decent speed boost.

You can check for updates by opening the main settings, tapping About and then looking for the Software Update section. You can manually check for updates using the button there, or you can check the box next to 'Automatically check for updates'.

Factory Reset

If your device has become cluttered up with apps, files and other stuff and is showing signs of struggling to do anything, it could be time for a Factory Reset (also called a hard reset). This is just about the best way to achieve a performance boost, particularly with older handsets.

Factory reset is not a step to be taken lightly. It will permanently delete all your data and customised settings and will also remove any applications you downloaded and installed. Be sure to back up any data and files you want to keep. Factory reset will not remove the data and files that are on your microSD card.

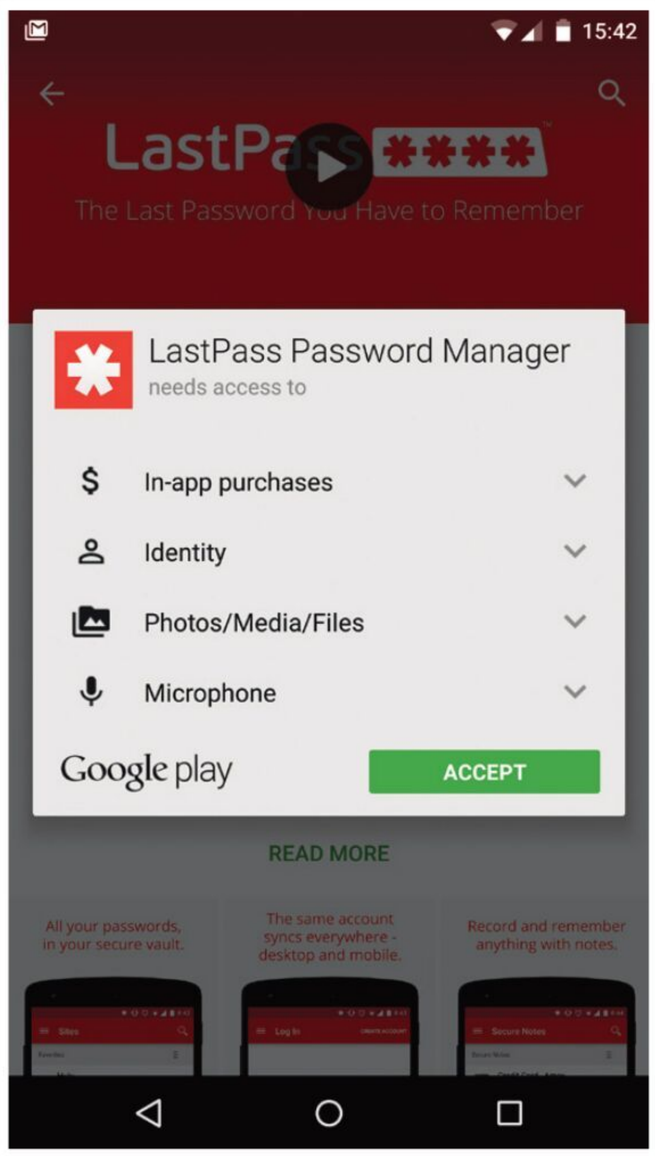
The simplest way to perform a factory reset is through the settings menu. Go to Settings > SD and device Storage (or Privacy) > Factory Data Reset. On newer versions of Android, backup and reset has its own section in the main Android settings. On the following screen select Reset Device or Factory Reset. Once the device has restarted, you will need to enter your Google account details, etc. so make sure you know them and have them to hand.

Manage Multiple Passwords

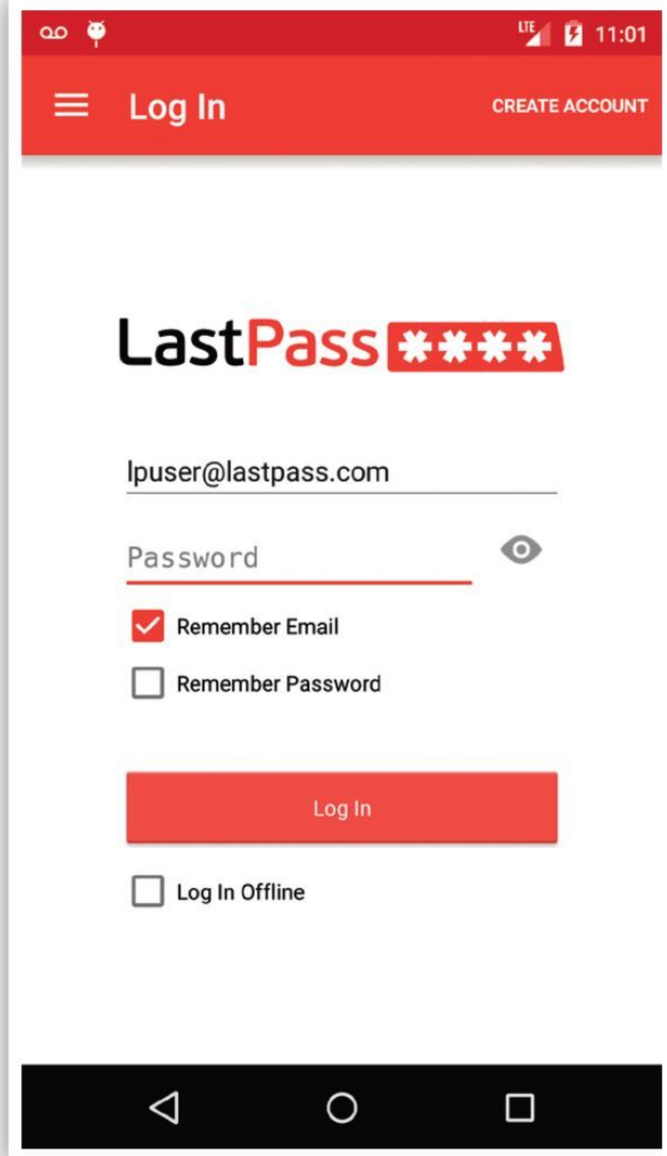
Password security has never been more important than it is today. We can manage everything from our business website to our bank balance online, and to do so we need passwords. A great bit of password security advice is to avoid using the same password for multiple accounts, but this also may mean keeping track of anything from five to 25 different passwords. LastPass, one of the best-known password managers around, solves that problem.

Never Forget Your Login

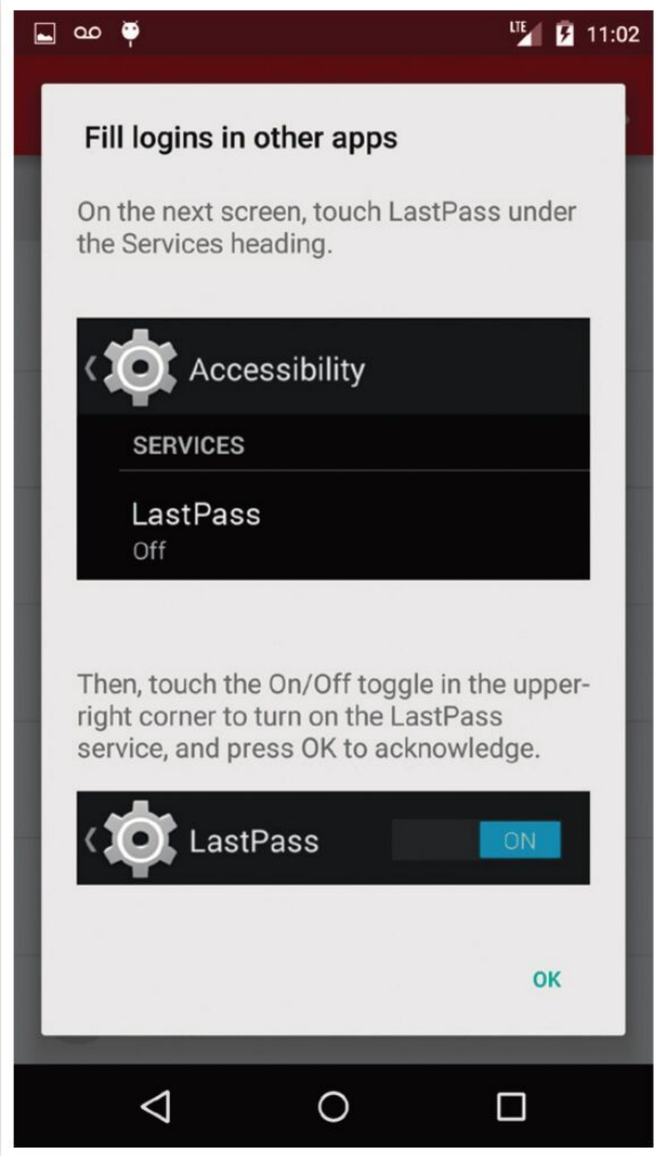
You almost certainly have dormant or inaccessible accounts littering the Internet, all because you have forgotten the login details.



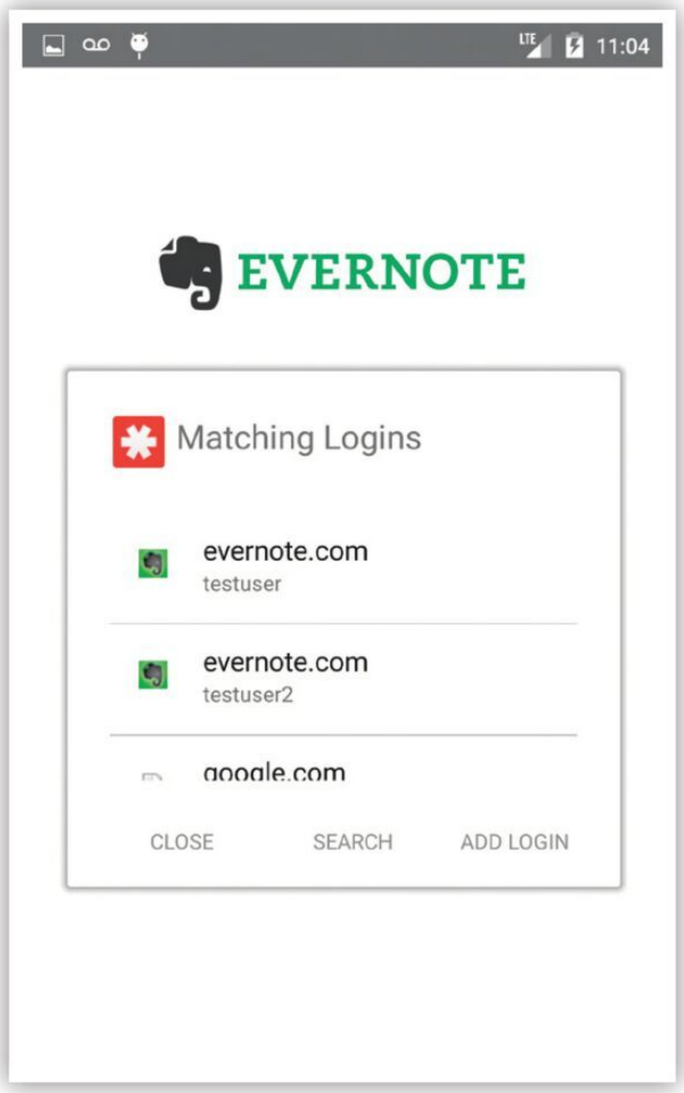
1 To install, open Google Play Store on your phone or tablet and search for LastPass. If you would like to attempt a manual installation, you can download the Android app file (apk) from https://lastpass.com/lpandroid.apk. LastPass will only work properly for apps on devices running Android 4.1 and later. If you want to fill in forms in Chrome, version 4.3 is needed.



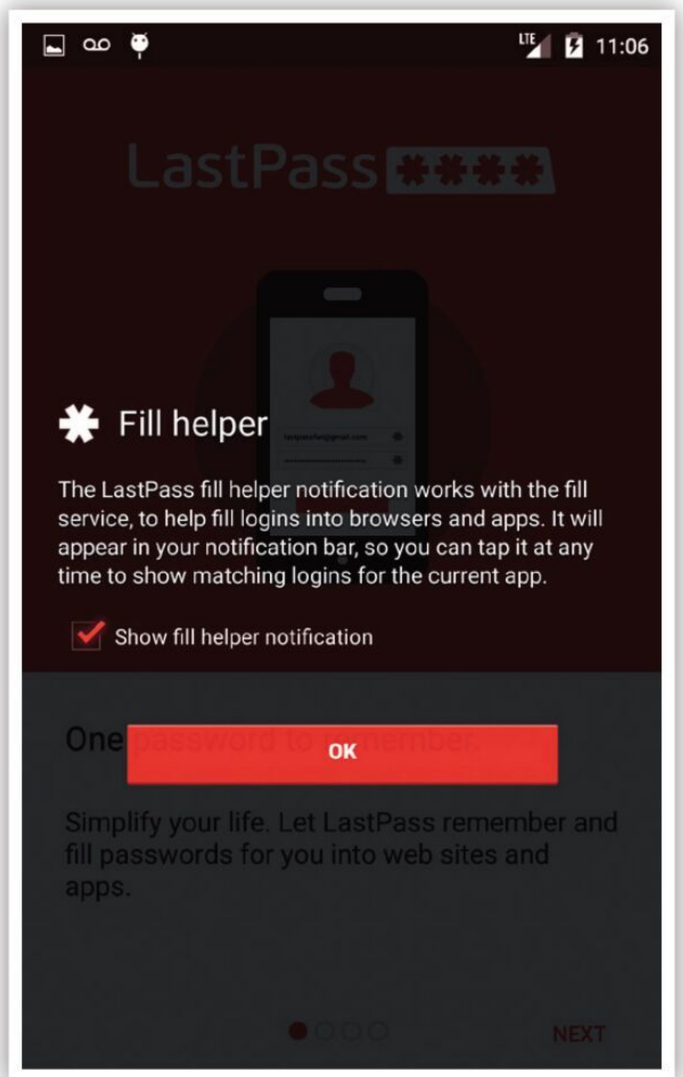
2 You will then need to create a new account. Enter your email address first, and then choose your master password. This is the password which gets you into LastPass, and controls access to all of your other passwords and form information, so make sure it is strong but memorable. Confirm and choose a reminder.



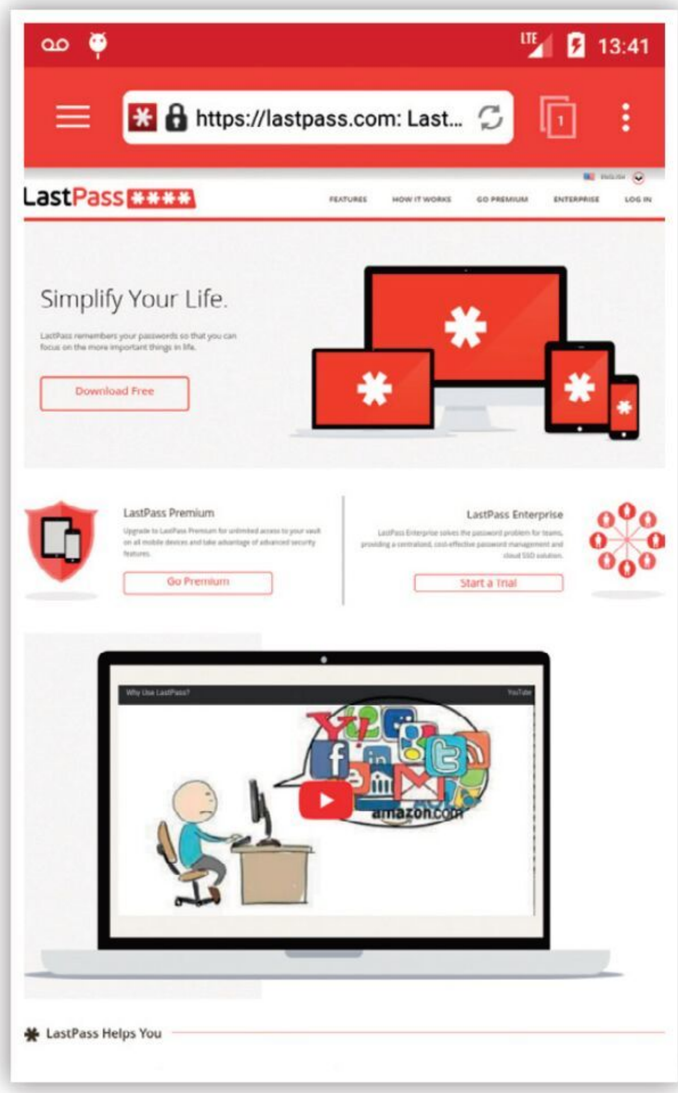
3 If you would like LastPass to be able to fill in logins in other Android apps, you should activate the feature now. You will be taken to the Accessibility settings on your device and will see a new addition. Tap LastPass and use the slider to enable the function. You can set this up later if you wish. Tap Back to return to LastPass.



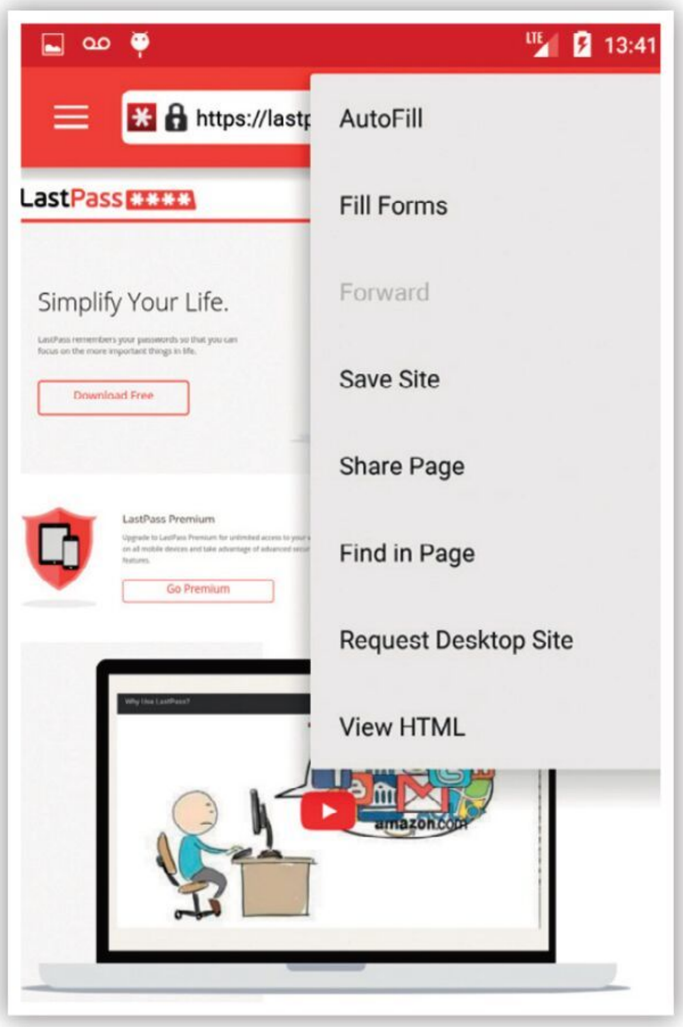
4 To fill an app, just tap on it to launch from your home screen, and LastPass will offer to fill in the details for you. To fill in Chrome, you will need to launch your Chrome browser from your home screen and then navigate to a site. Tapping on the Username or Password field will engage the autofill feature.



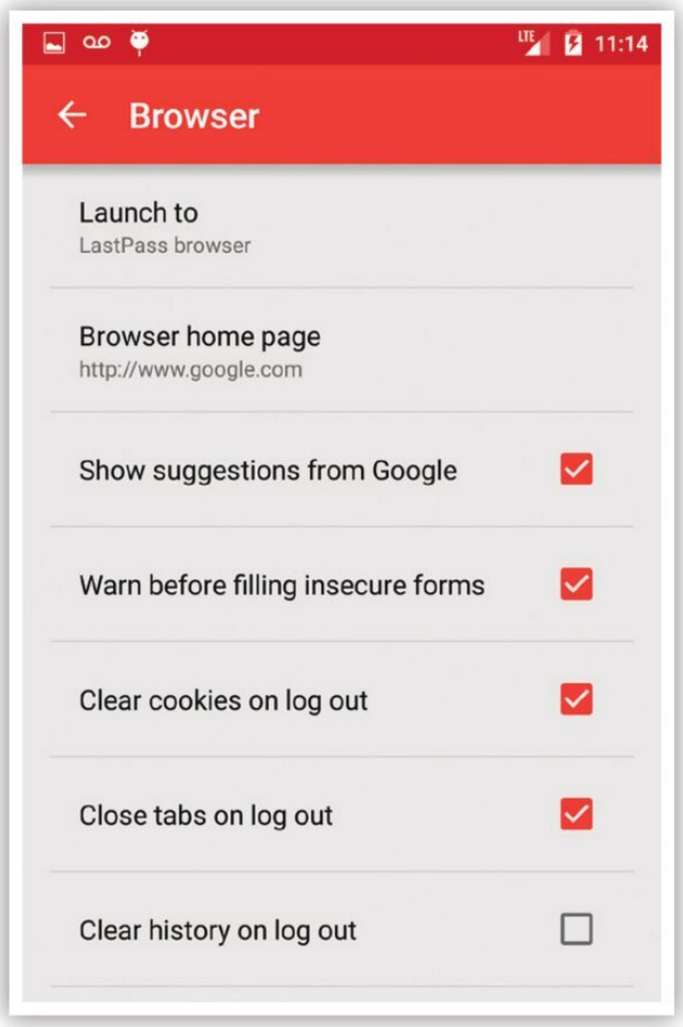
5 After installing LastPass, you will have the option to enable the Fill Helper. The Fill Helper is great for pages and apps where the App Fill Window is not allowed to pop-up automatically. Select the options and apps you would like the Fill Helper to appear on. You can also change these settings later in Settings > App Fill.



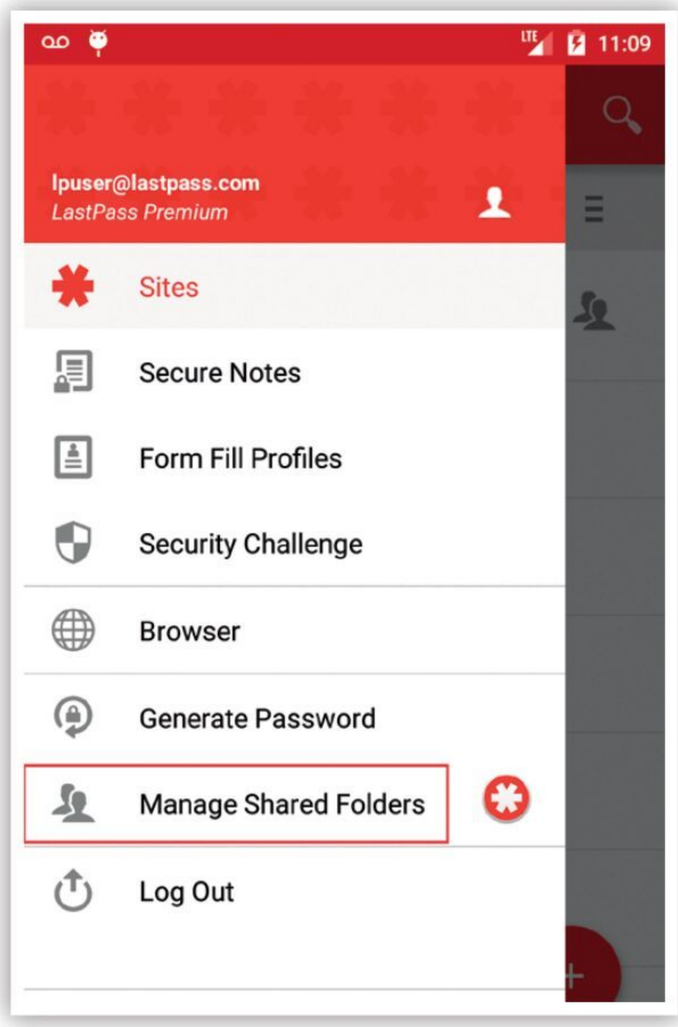
6 LastPass for Android features a built-in browser that will automatically fill your login information for each of your saved LastPass sites. Once you have installed the LastPass Android app, tap the App icon to launch the login page. Tapping the button in the upper-left of this screen gives you access to the Vault options screen.



7 When LastPass detects that you are entering a password for a site that is not already stored in your LastPass Vault, or creating a new login on a new site, it will pop-up the Generator icon to assist you. Use the slider to change the password length, and tap the Copy icon to copy the current password shown. Tap Save to finish.



8 Once the app is up and running, it's time to check some settings. Lock LastPass Automatically will allow you to set when LastPass will lock itself if sent to the background or if the screen is turned off. Accessing LastPass again will require either your master password or a PIN code. The sub-options allow you to set a PIN code and modify the Reprompt Timer.



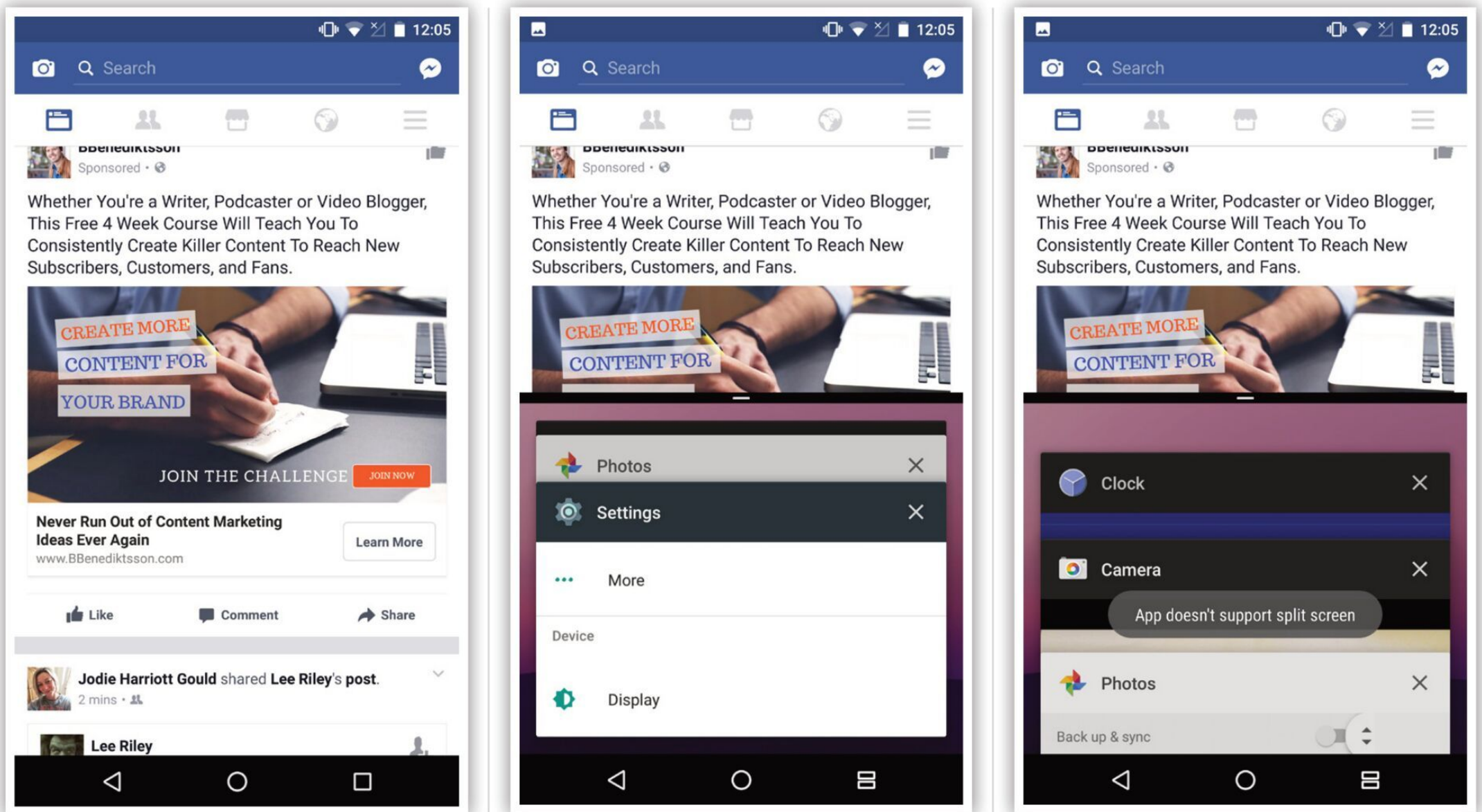
9 Shared Folders are available for both LastPass Premium and LastPass Enterprise users. You can open the Manage Shared Folders feature from the Vault Menu. From there you can tap on the Plus (Floating Action button) to instantly create a new Shared Folder. You can also add or remove users from the Shared Folders.

How to Use Multi-window

The update to Android 7.0 (Nougat) adds support for displaying more than one app on the screen at the same time. On handheld devices, such as phones or tablets, two apps can run side-by-side or one above the other in split-screen mode. On Android TV devices, apps can use picture-in-picture mode to continue video playback while users are interacting with another app.

Launching Multi-window

It seems that most apps can be viewed in multi-window mode but you may find some force full screen (including many games) so this feature won't work.



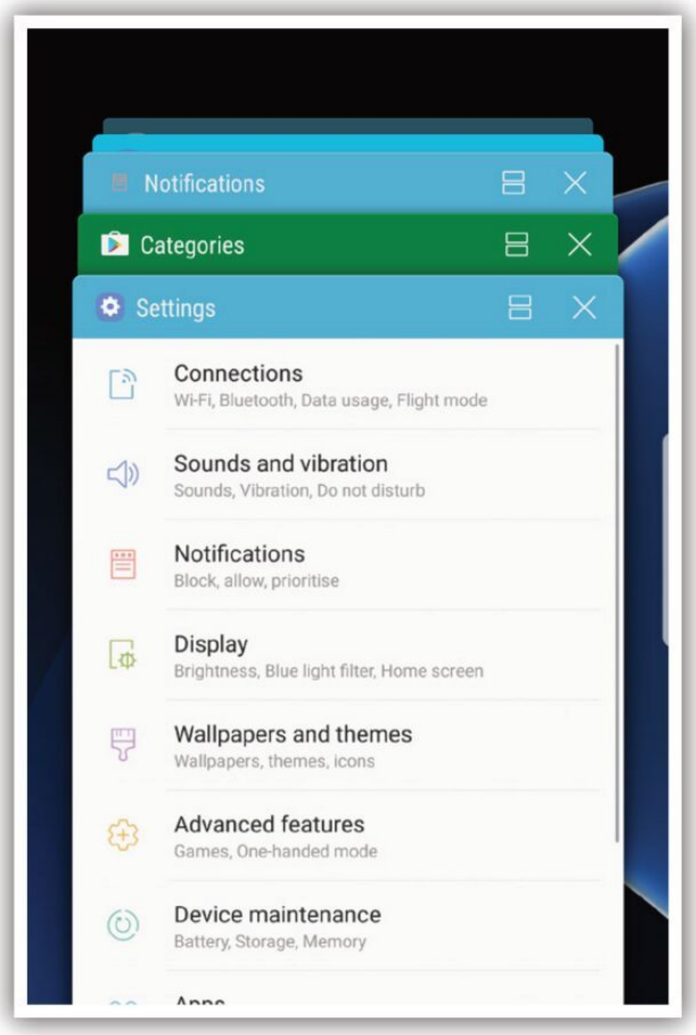
1 Open the first app you want to view on your phone or tablet. This will obviously fill the whole screen as usual. In our case we have opened Facebook but almost any non-game app will work with multi-window mode in Android Nougat and later. A few apps, and nearly all games will force full-screen, and cannot be viewed in multi-window mode.

2 Now tap and hold the Recent Apps button, the square icon on your device, previously known as the multitasking button. If the button is on screen (not a capacitive button), you will see that the it changes to two smaller rectangles and the screen splits. The first app open will move to the top and the bottom will show recent apps to choose from.

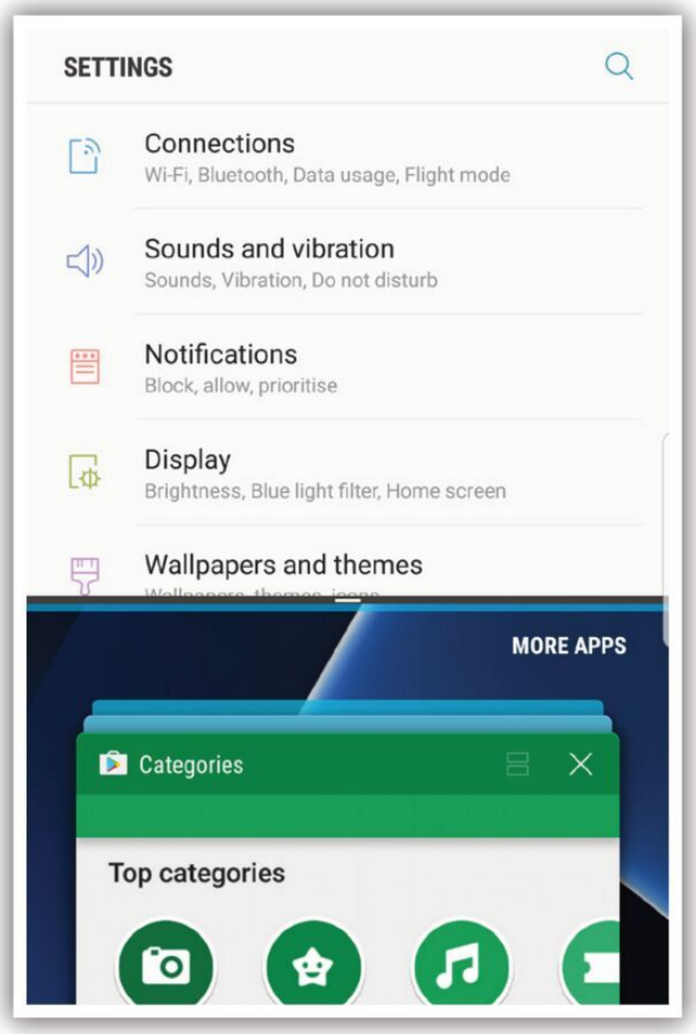
3 You can then select the app to fill the bottom half of the screen from recent apps. If an app doesn't support split-screen, a message will appear on the thumbnail telling you so. You can change the ratio of the split by touching and holding on the white line in the divider and moving up and down until the screen is split at the ratio you want to use.

Multi-window on Samsung

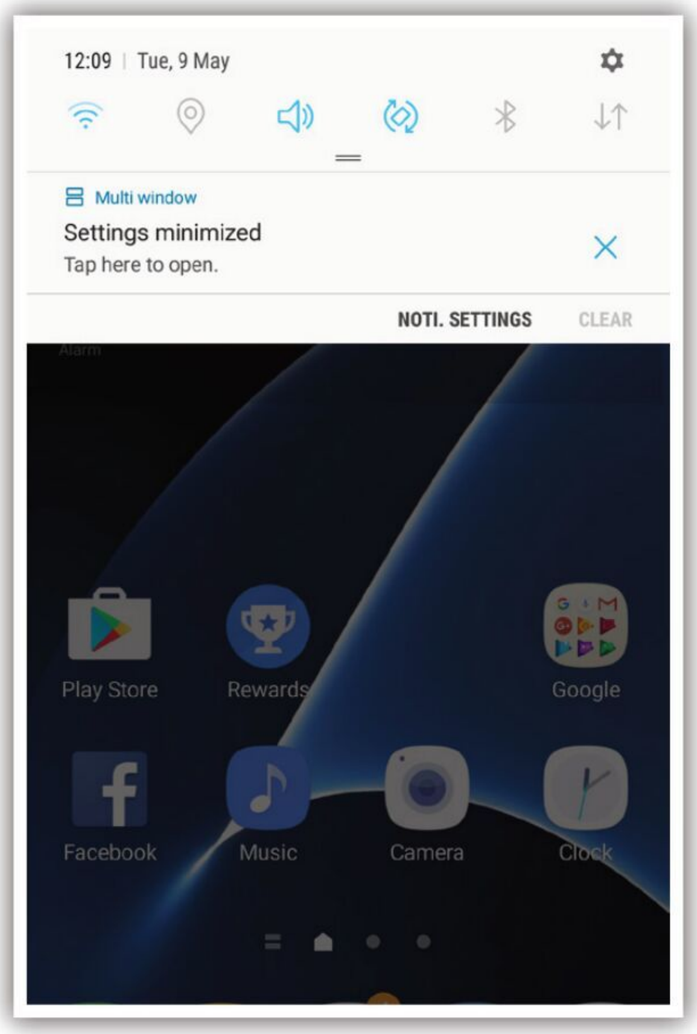
Multi-window mode on Samsung devices has been available for some time and works slightly differently to most other devices, even after updating to Nougat.



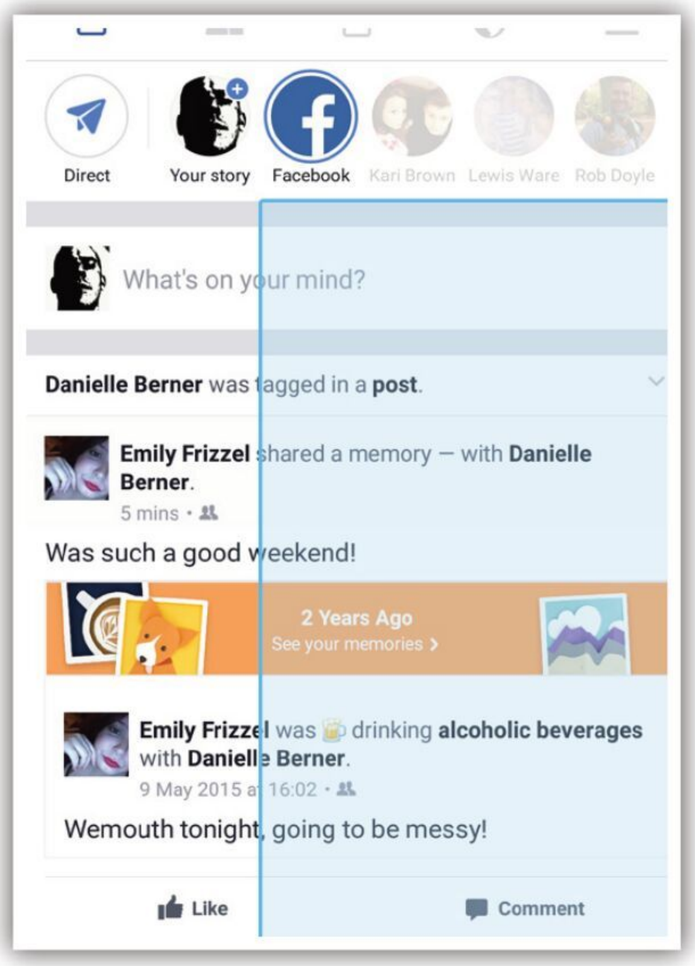
1 On your Samsung device, tap the Recents button to view the thumbnails of recently opened apps. On the top bar of each app thumbnail is a multi-window icon. Tap this to open the first app in the top half of the screen. You will see that the bottom half still shows Recent Apps.



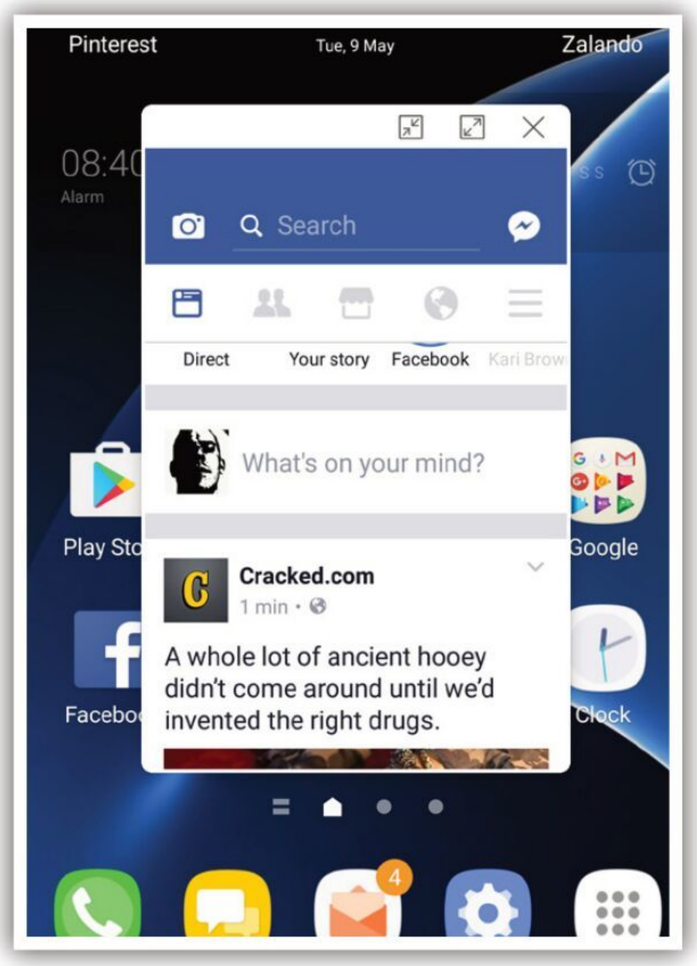
2 You can then tap the thumbnail to open an app in the bottom half of the screen. To change the ratio of the split, touch and hold on the dividing line and drag it up and down. If you drag the divider all the way up or down, you will drop out of multi-window back in to single window mode.



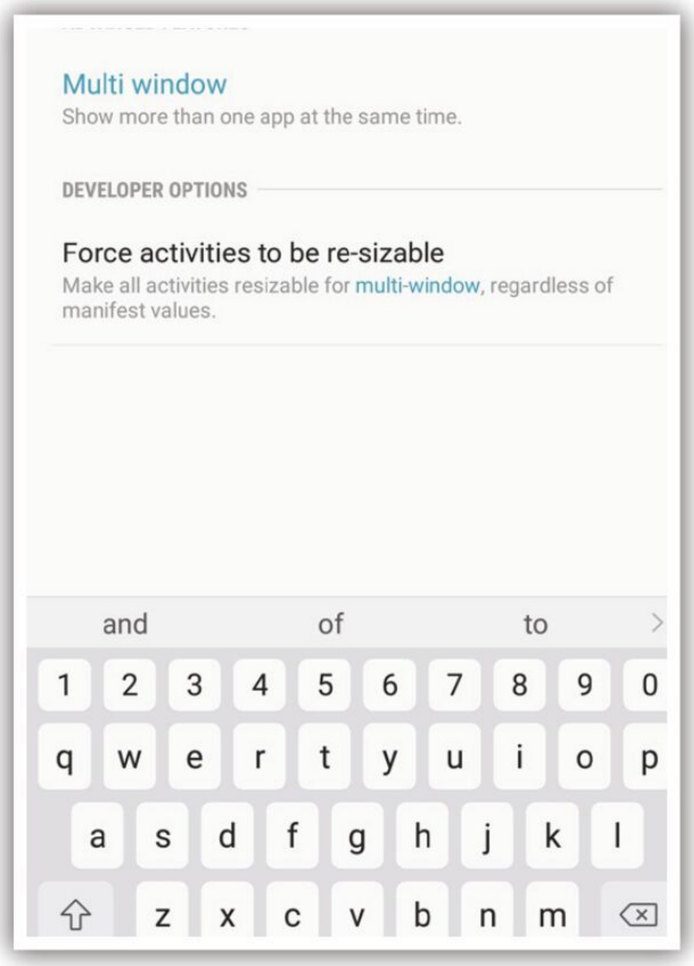
3 If you leave multi-window mode by pressing the home button, it will stay active. A notification in the status bar will display the multi-window icon, and tapping it will switch back to the split screen view. You can cancel the split screen by tapping the X in the notification.



4 You can also open an application in a pop-up window on some Samsung devices. To open an application in a pop-up window, open the application, touch a top corner of the screen and swipe diagonally towards the centre of the screen.



5 Touch and drag the blue outline to resize the pop-up. Touch and drag the control dot at the top of the pop-up window to move it around the screen. You can tap the arrow controls at the top of the box to change back to full screen or shrink the window down to app icon size.



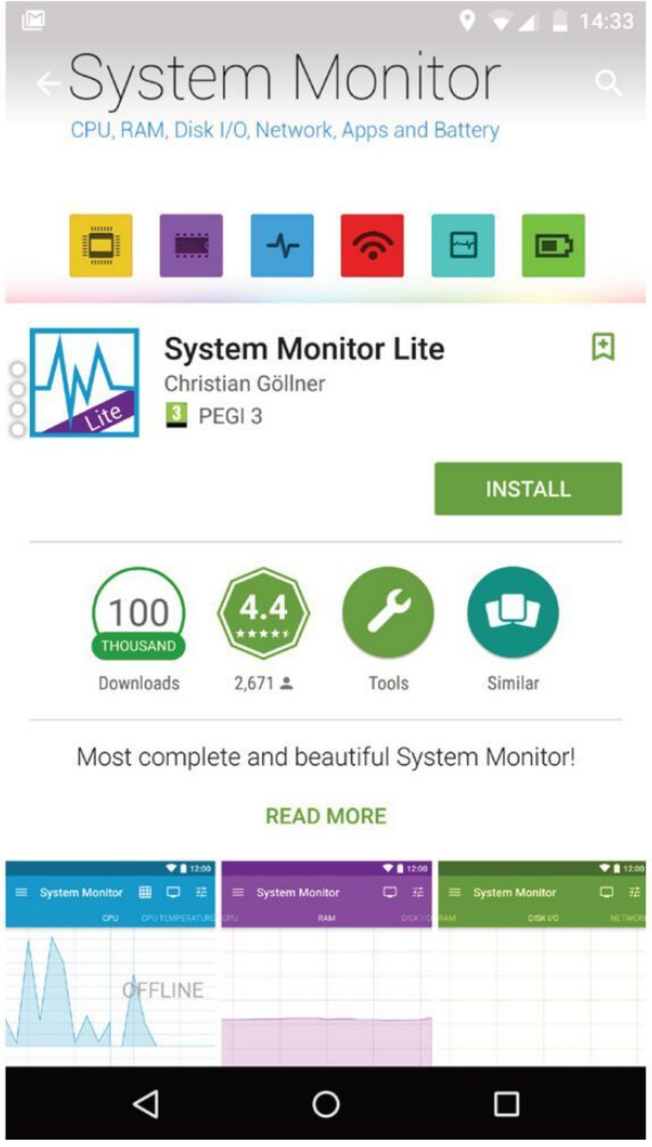
6 If you search for multi-window in the settings on your Samsung Galaxy, you will find that there are a few options for the split screen mode. You can turn certain features on and off and change how the mode is accessed. There is also a developer option to force apps to split screen.

Using a System Monitor

Task Managers, the apps which monitor your device and kill any background tasks which could be slowing things down, were once one of the most recommended tools for Android. Modern versions of the OS, however, have no need for task managers as they become increasingly good at assigning system resources intelligently. But that doesn't mean there isn't a place on your device for some system monitoring to keep things running smoothly.

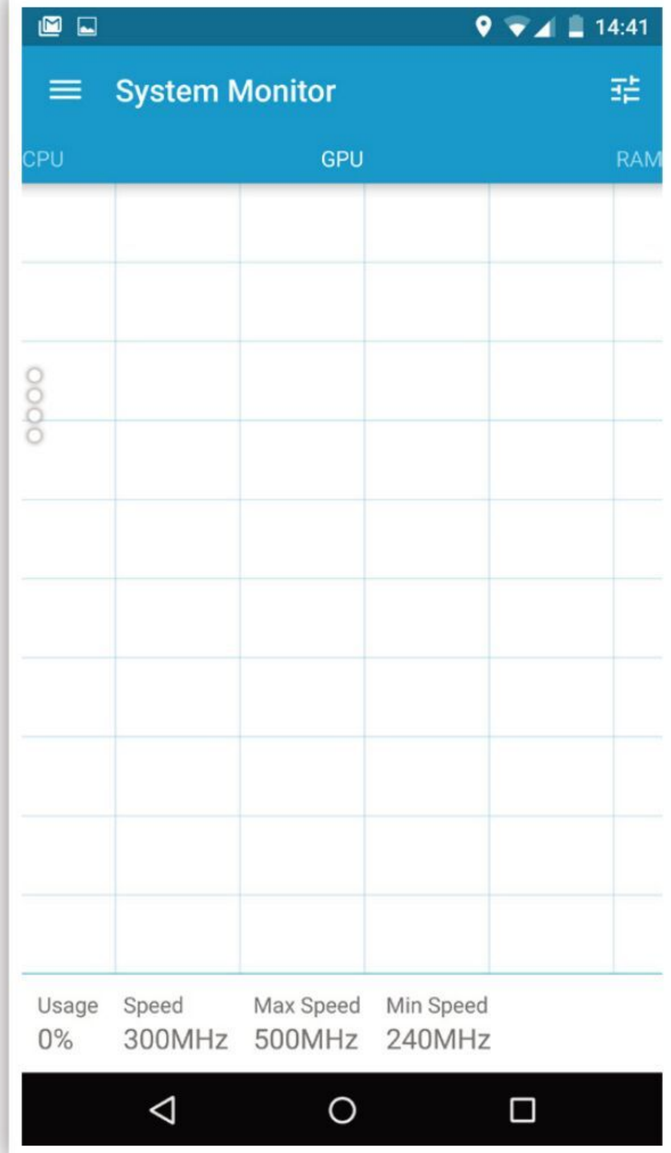
Monitor System Statistics

Being able to easily view important system stats is the first step towards making sure that your Android device runs smoothly.

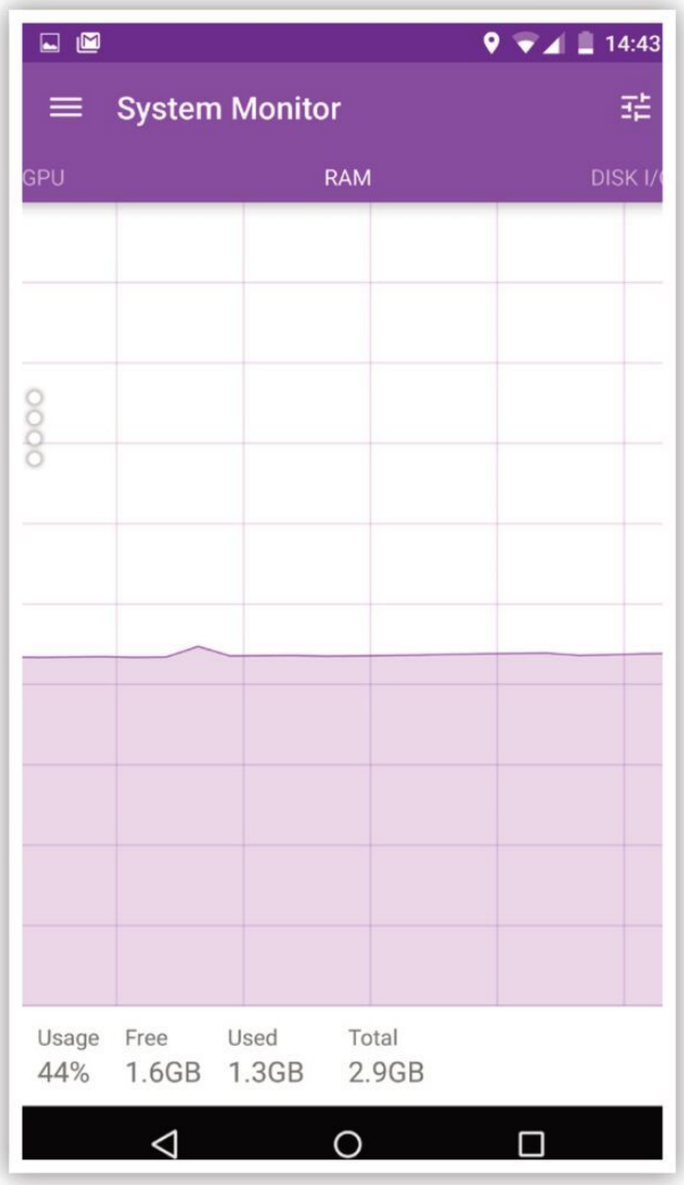


1 There are lots of different system monitors available, both free and pro versions, which will monitor a variety of system functions. We have chosen the lite version of System Monitor by Christian Gollner. This version is free, but offers the option to upgrade should you want to.

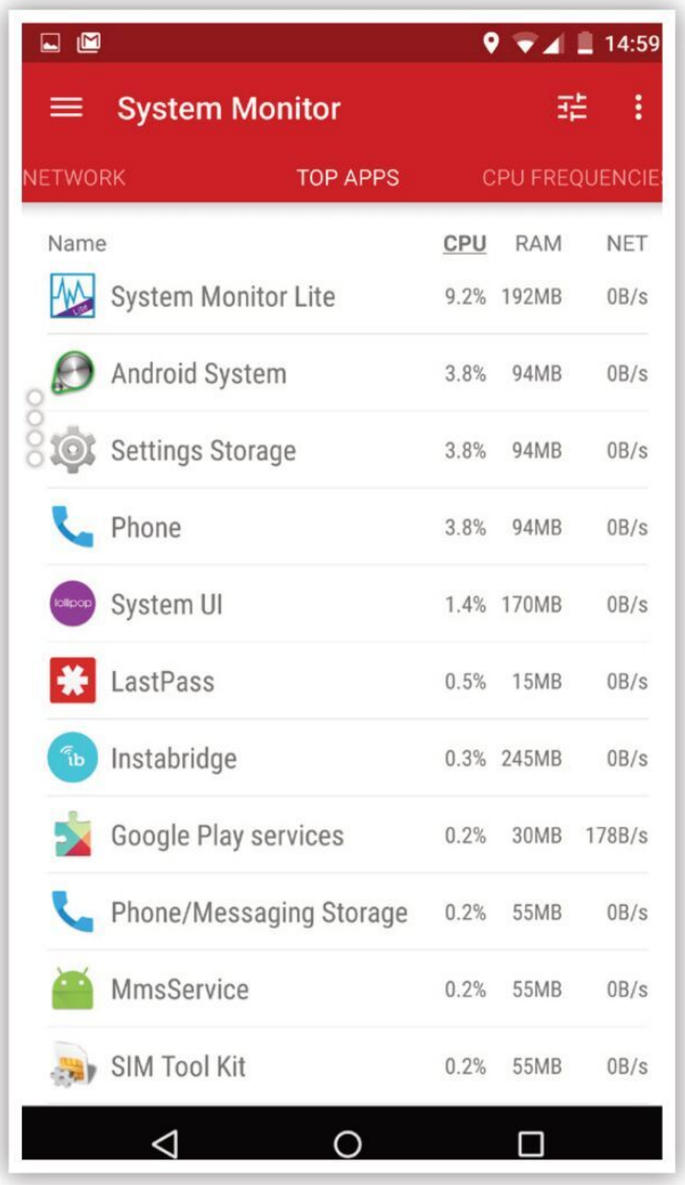
2 Once installed, open the app to set the monitor running. The initial screen will show CPU usage on a graph, in real time. If your device is a multi-core, this will be split into two or four separate charts, showing what each of the cores is doing. Tap the Grid button to view the CPU as a whole.



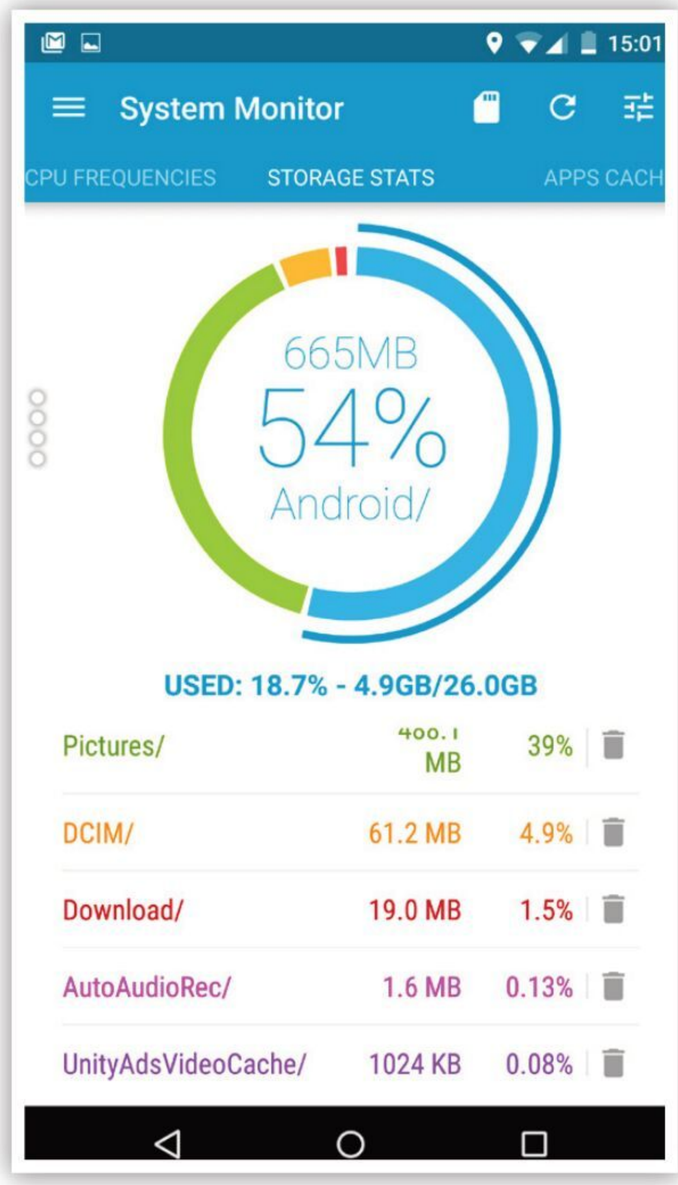
3 Swipe left to see the next graph, showing the GPU (if applicable on your device). In most cases, the GPU should not be using any system resources unless you have something running in the background. Current, minimum and maximum speeds are shown at the bottom of the screen.



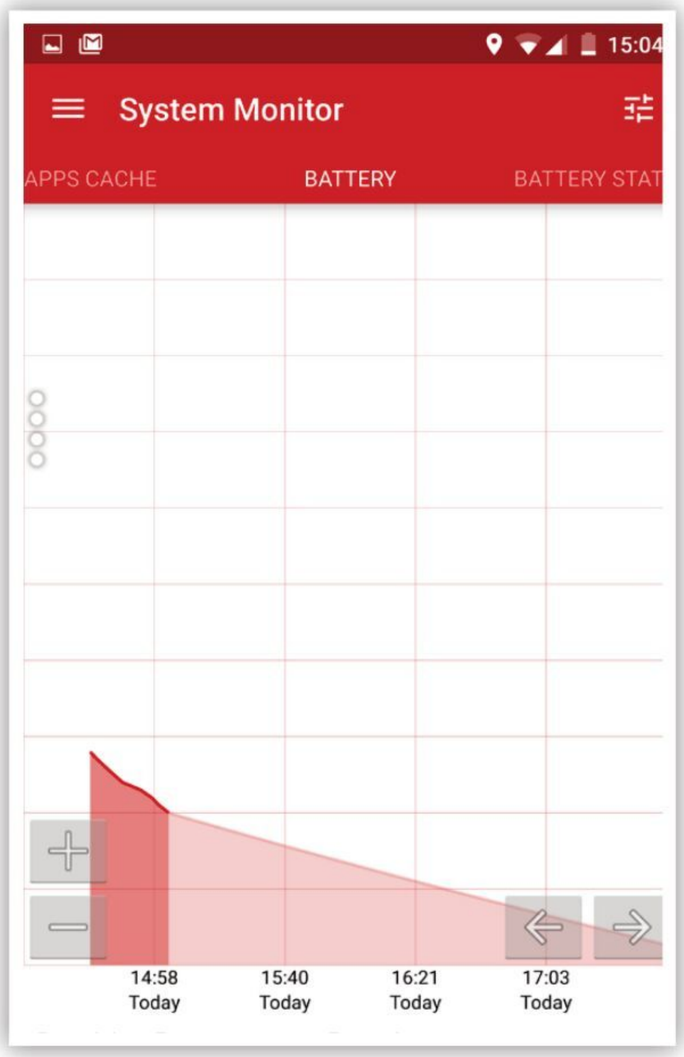
4 For a smoothly running device RAM usage, shown on the next graph, is one of the most important system stats you can monitor. At the bottom of the screen you will see the total amount of RAM available, as well as how much is currently being used. Try to keep this lower than the amount free.



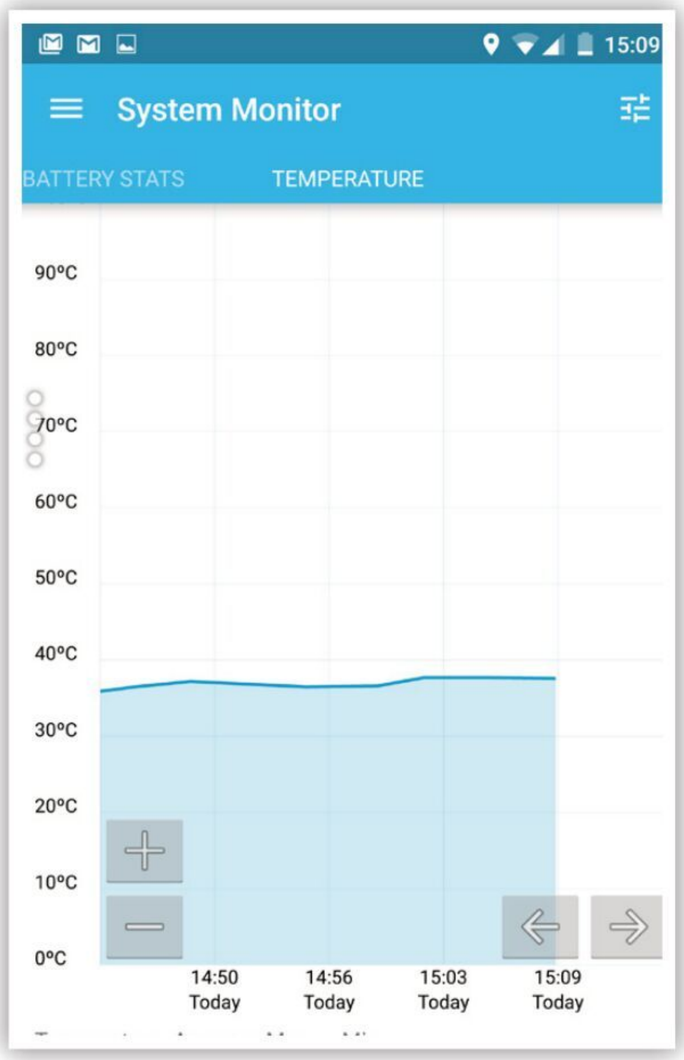
5 The remaining real time graphs show monitoring on Disk I/O and the Data Network (if you are currently connected to a mobile data network). After this you will see the Top Apps screen. This is particularly useful for checking which apps use the most system resources.



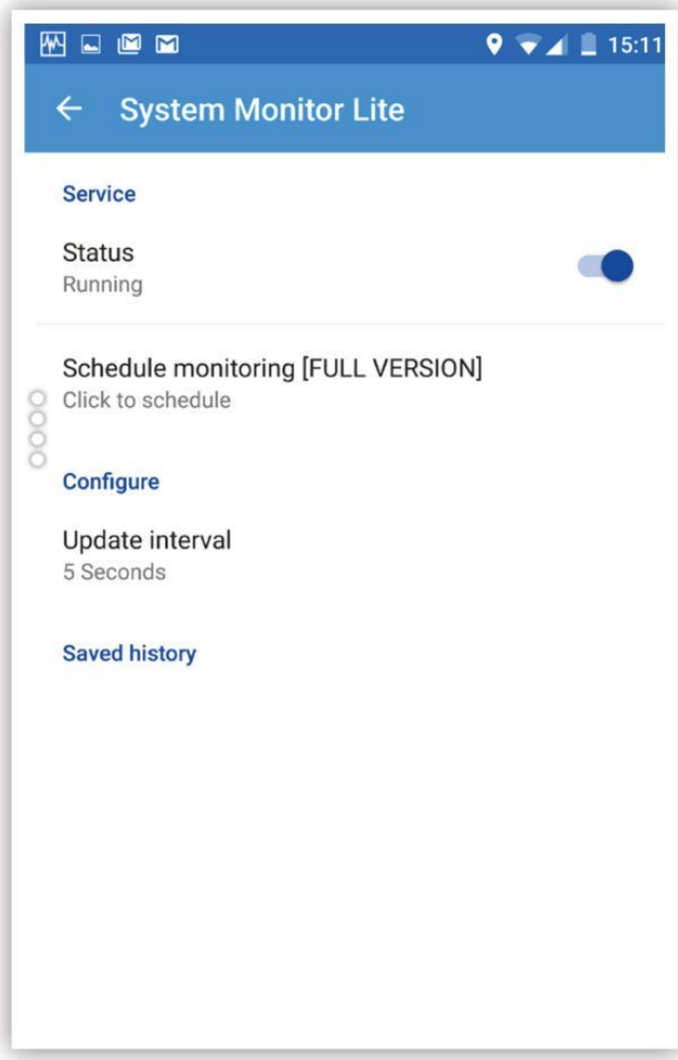
6 If you are struggling for storage space on your device, the Storage Stats should come in handy. You can view storage stats by either swiping left from the other graphs, or tapping the Menu button and selecting it from the list. The full version of the app allows you to delete directly from the list.



7 The Battery and Battery Stats let you see exactly what is happening with your device battery between charges. The Battery graph shows the current charge level, and a graphical estimation of when that charge will run out based on current usage. For more detail, tap Battery Stats.



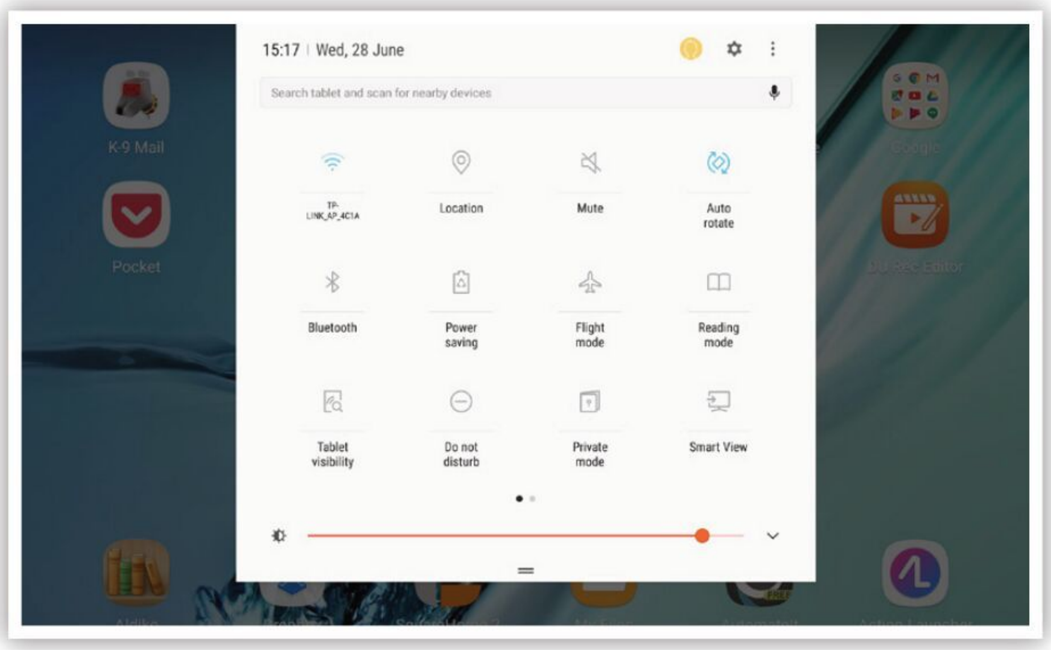
8 A big indicator of heavy battery use is temperature. The temperature graph allows you to see when your device has heat spikes, indicating high power usage. Using the timeline, you may be able to link the spike to a particular app or feature you were using.



9 To build an accurate picture of your system resource usage, you really need to let the app run in the background for a few days, so it can gather information when you are using the phone or tablet normally. Tap the Settings button > Background Monitoring and tap the slider to turn it on.

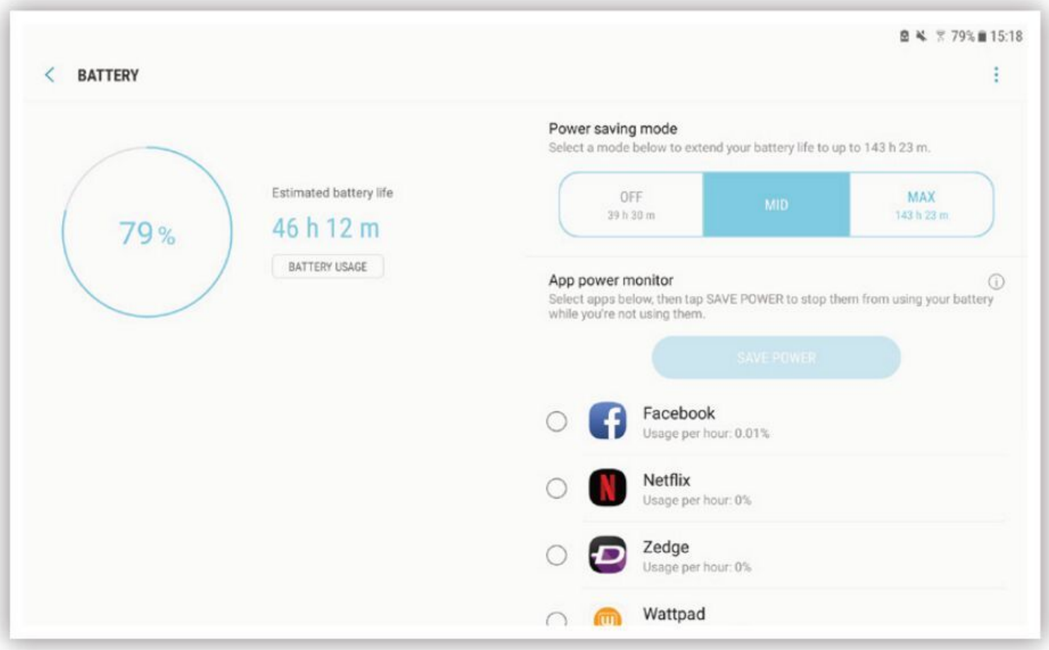
How to Boost Battery Life

Short battery life has been a drawback of all smartphones and tablets for as long as they have been around. As device manufacturers improve battery technology and capacity, more power-hungry processors have become the norm. However, there are several things users can do to increase the length of time between charges.



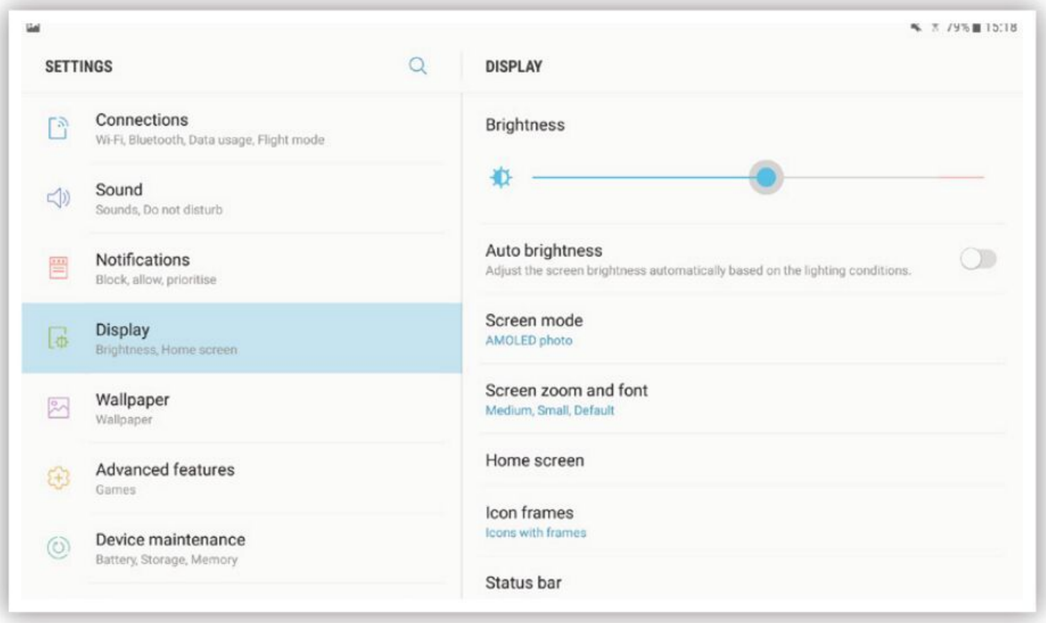
Quick Settings

Many current Android devices now allow you to quickly see and control what services are running: Wi-Fi, GPS, etc. This is similar to the Power Control widget found on some other devices. Although the quick settings don't actually save battery power, they do allow you to quickly and easily keep battery draining services under control.



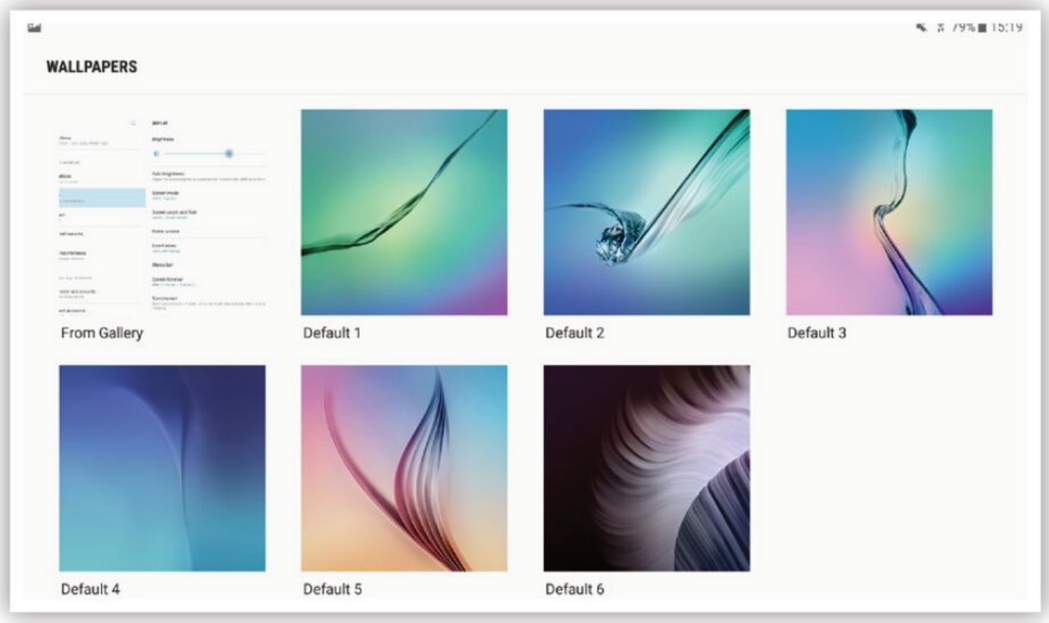
Power Saving Mode

Many Android devices now include a Power Saving feature which, with the flick of a switch, can automatically activate several power-saving tools. These include limiting the performance of the CPU, reducing the amount of power going to the display and turning off Haptic Feedback. You probably won't want to activate all of these tools all of the time but in an emergency it can work well.



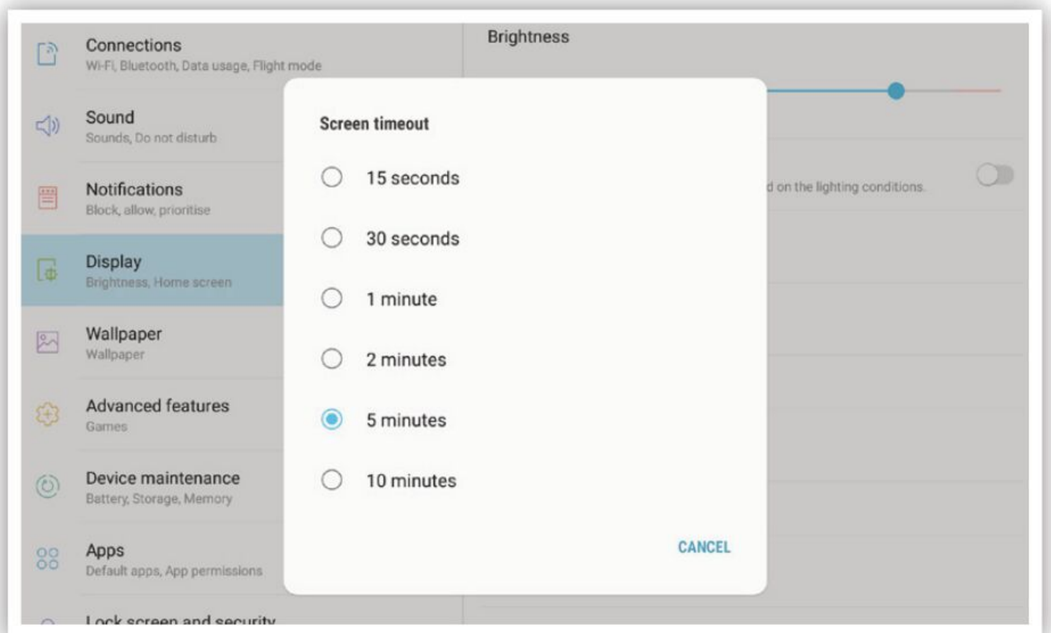
Adjust Backlight Brightness

One of the quickest and easiest ways to save some battery juice is to turn down the brightness of the screen backlight. There are a couple of different methods to do this. Open Settings > Display > Brightness and then move the slider down to wherever you think is acceptable. Less than 50 per cent is advised. You can also access the brightness control from the Notifications panel.



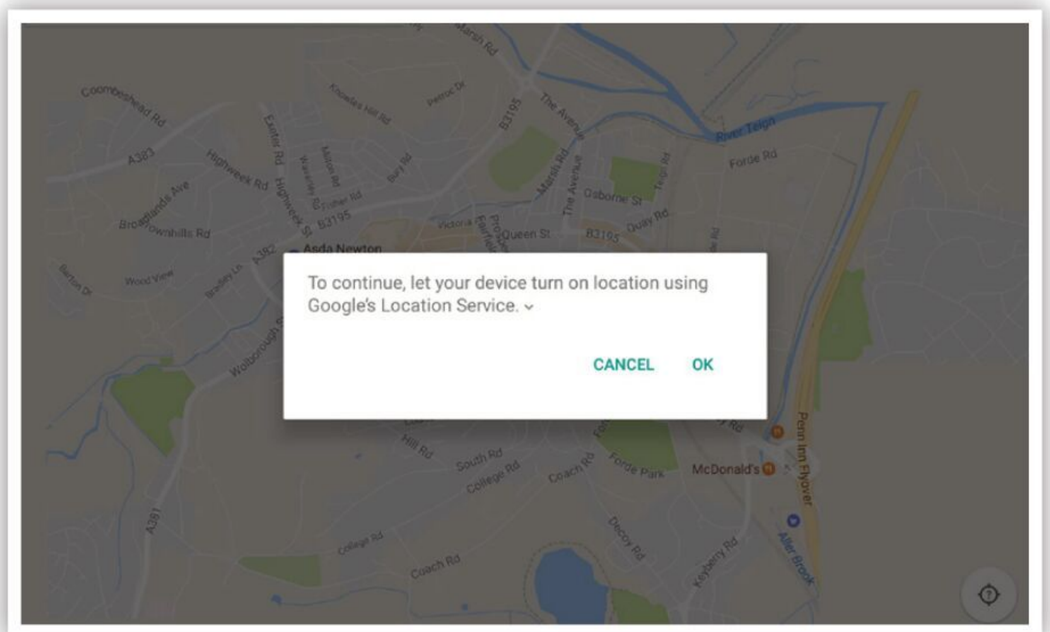
Change the Wallpaper

Getting rid of your lovely Live Wallpaper isn't going to give you an extra 24 hours for watching videos but it will make a slight difference if your device is really struggling to last a day; and if you're changing to static wallpaper, choose a dark (preferably black) one. The pixels in AMOLED screens, found on many Android devices, are photo emissive. This means that they generate light.



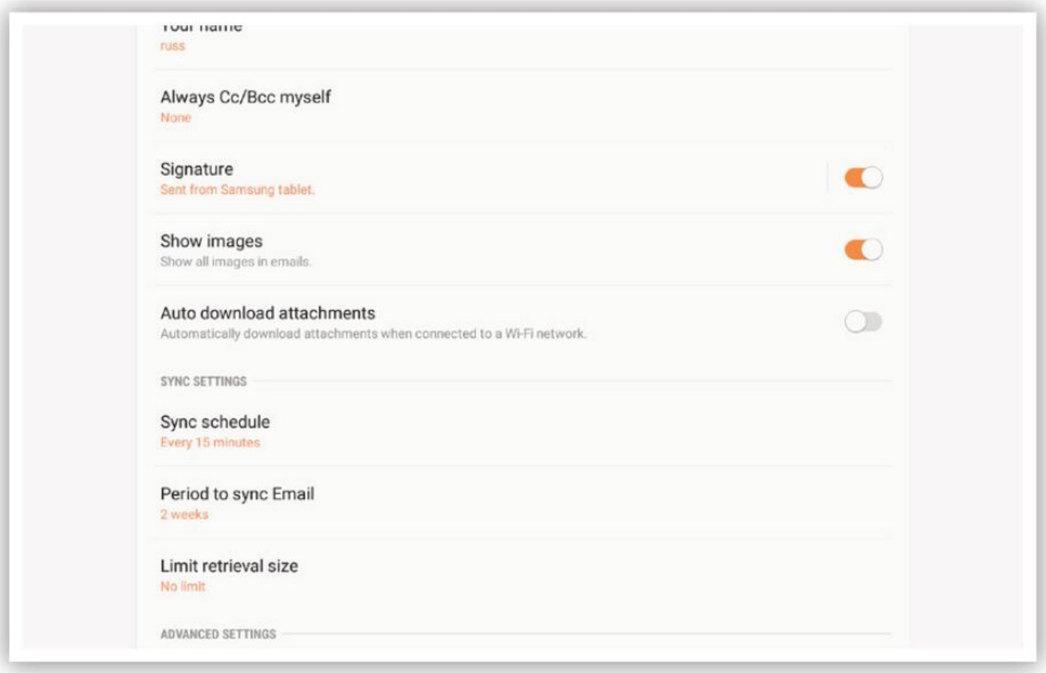
Decrease Screen Timeout

This will not save massive amounts of power but every little helps! Then, do you really need your screen to stay on for ten minutes after you finish using it? Obviously you can switch off the screen manually before you put your device away, but each time you get a notification or a message and then don't check it or don't hear it, your screen may stay on for whatever period is set.



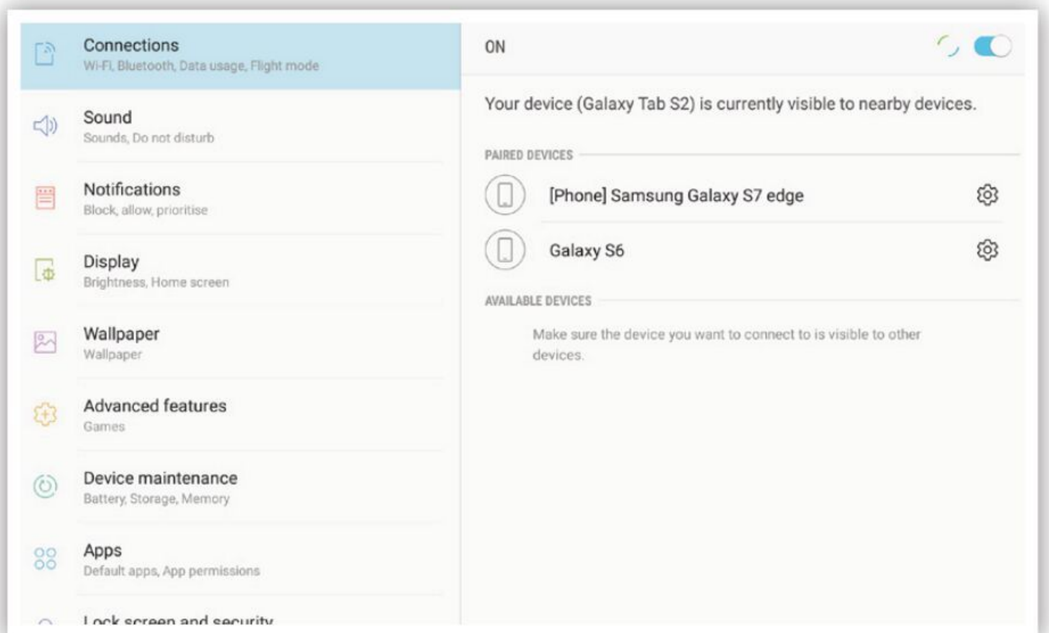
GPS and Wireless Networks

Having GPS turned on will drain the battery like almost nothing else. If you are using location-reliant apps, then of course you may need to have GPS on. Just remember to turn it off when you're not using it. Turn off GPS either with the Quick Setting buttons or go to Settings > Location Services. Whilst you're in Location settings, make sure that Use Wireless Networks is also unchecked.



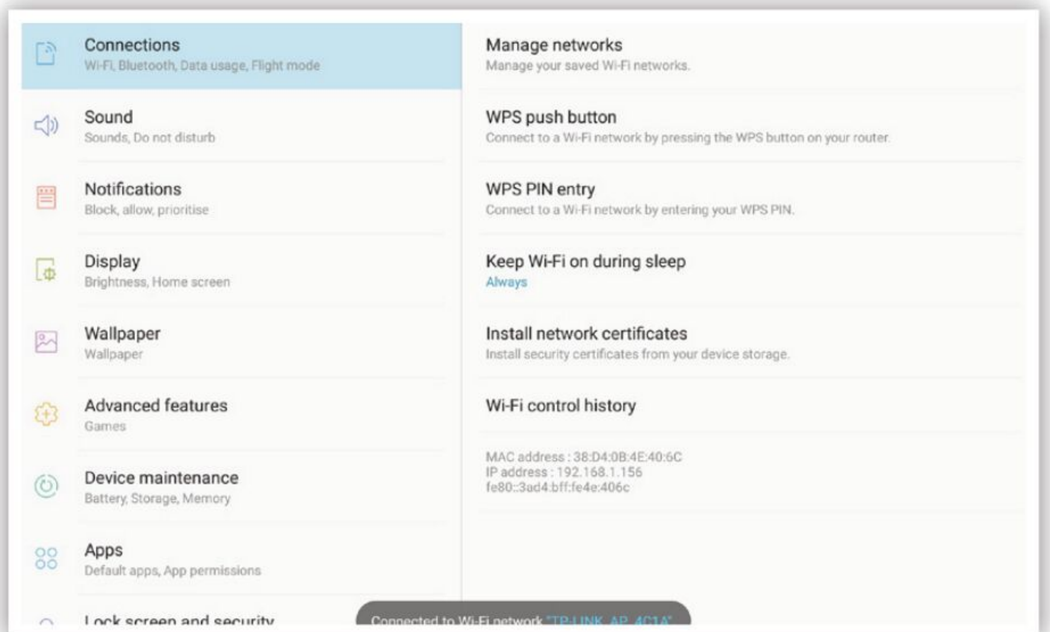
Reduce Update Frequency

If you don't want to disable Always-On Mobile Data, you can go into each app that updates regularly, Facebook, Twitter, etc. and change their individual settings to update less regularly. Where you will find this setting varies between apps, but it will usually be in the main settings menu for the app, sometimes under Notifications.



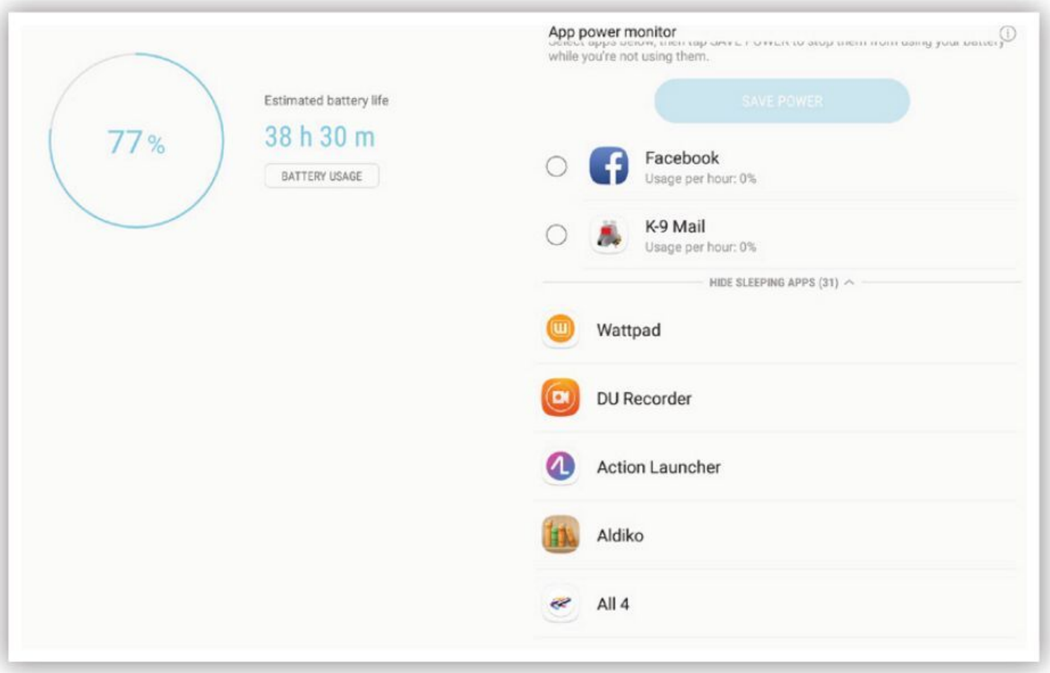
Turn Bluetooth Off

A surprisingly large number of people leave Bluetooth running all the time. Quite apart from being a bit of a security issue, Bluetooth will also use up a big chunk of your battery power over the course of a day, even if not actually sending or receiving files. To turn off Bluetooth go to Settings > Bluetooth. You can also control Bluetooth with the Quick Settings.



Turn Wi-Fi Off (or Have it Always On)

Following a bit of a theme, turn Wi-Fi off when you don't need it; alternatively, if you are usually near a reliable Wi-Fi connection, set it to be Always On. Wi-Fi uses less battery than a data connection, and when Wi-Fi is on, 3G will be off. Go to Settings > Wi-Fi. Press the Menu button and then choose Advanced. Open the Wi-Fi Sleep Policy menu and choose Never.



Background Apps

A quick way to reduce battery drain is to stop some of the apps running in the background. From Settings > Apps, swipe to the left and you will see a list of apps that are currently running. Tap on each one to see what they're for, and then you can stop any apps that you don't need running in the background all of the time.

DOING MORE WITH ANDROID

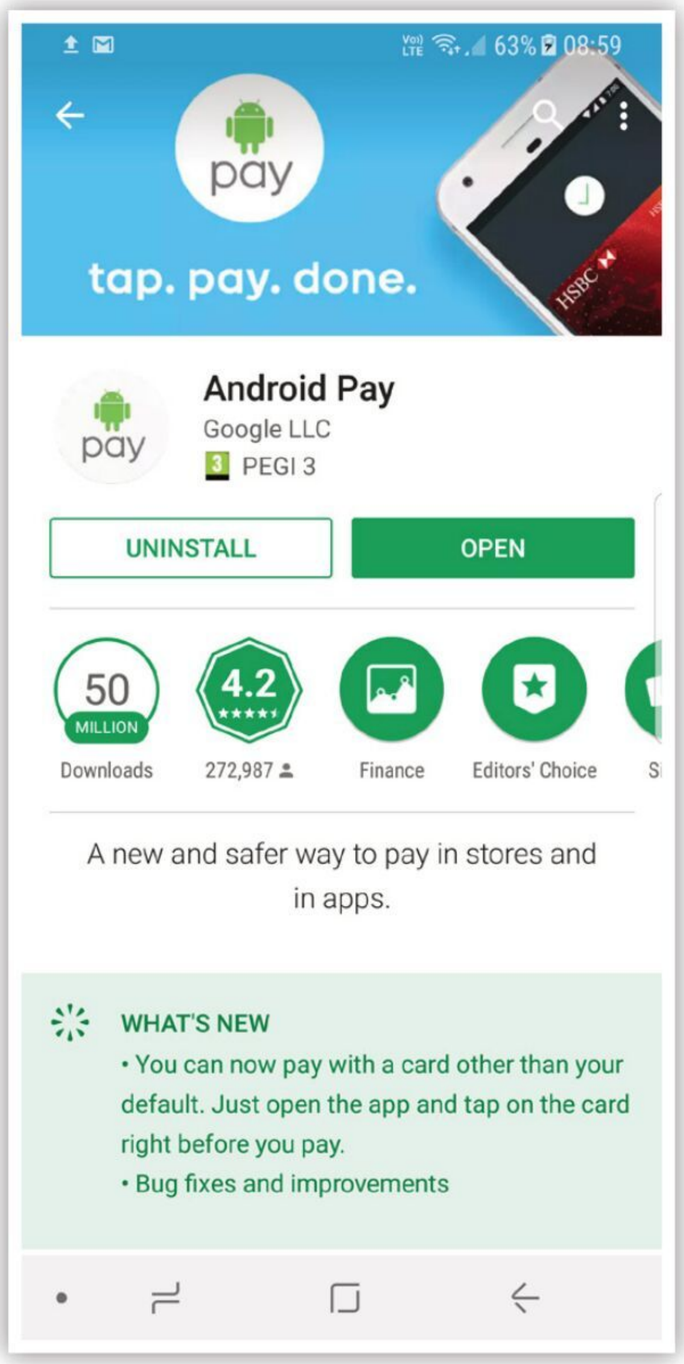
Our advanced and expert guides will introduce you to launchers and troubleshooting, show you how to access advanced developer options, monitor your system for problems and change the type of light your screen emits. Android is about so much more than email and browsing the Internet and this section will help to show you exactly that.

Using Android Pay

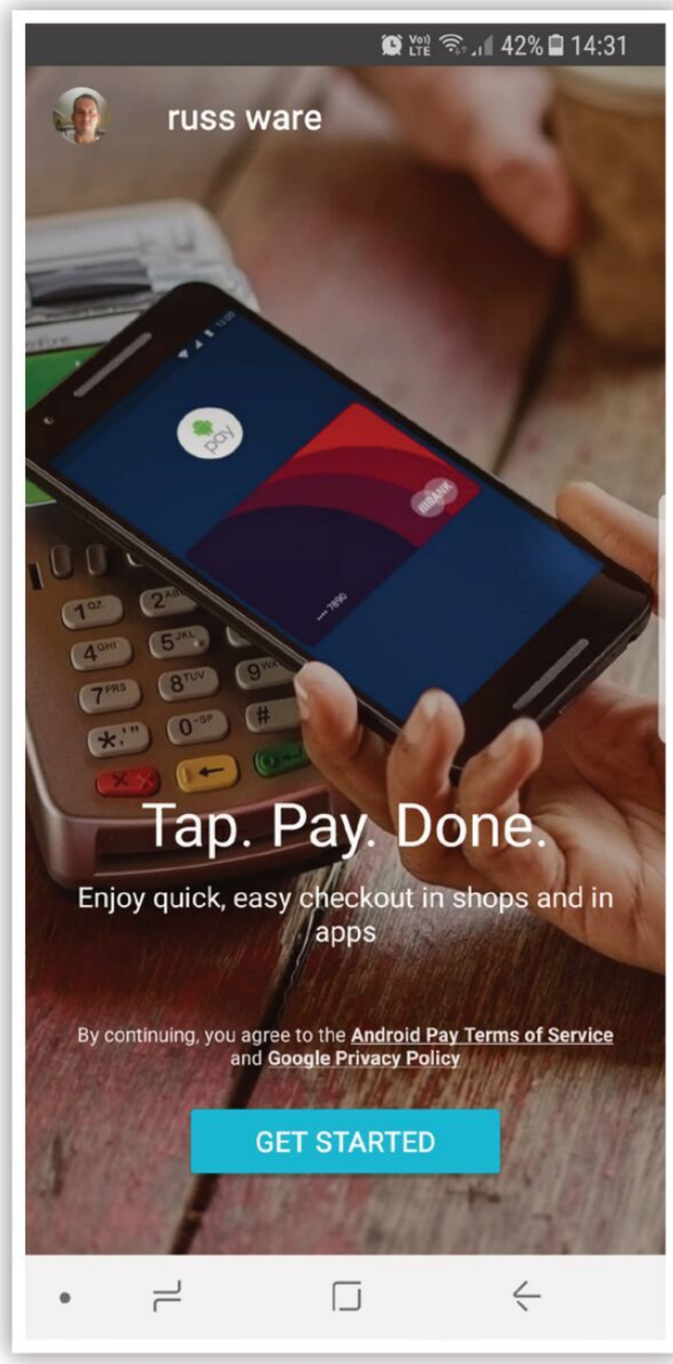
You already use your phone for just about everything, so why not use it to pay for stuff too? Android Pay lets you do just that. Just add your credit, debit, loyalty and gift cards to Android Pay and start shopping in stores, in apps and online, all using a secure and convenient system. Android Pay can be used at hundreds of thousands of shops around the world, wherever contactless payments are accepted.

Setting Up Android Pay

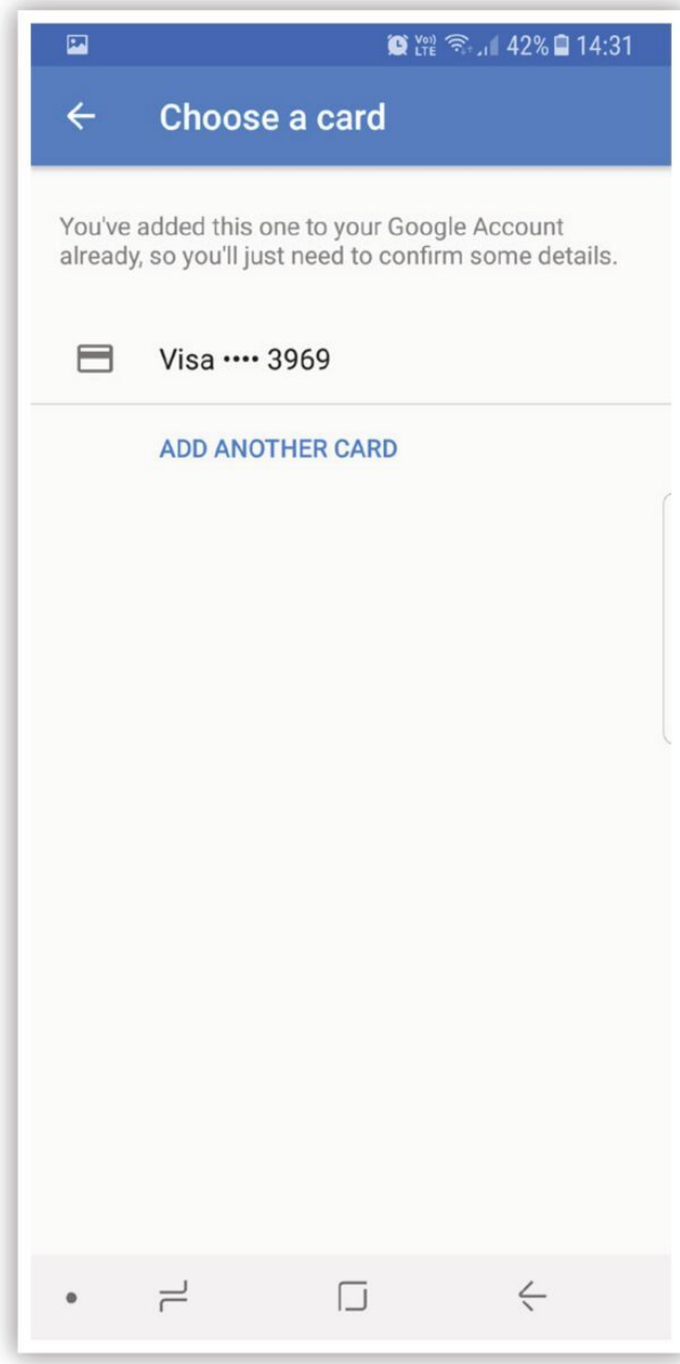
Android Pay is a secure system but as with anything to do with money and payments, it is important to make sure that you set everything up properly.



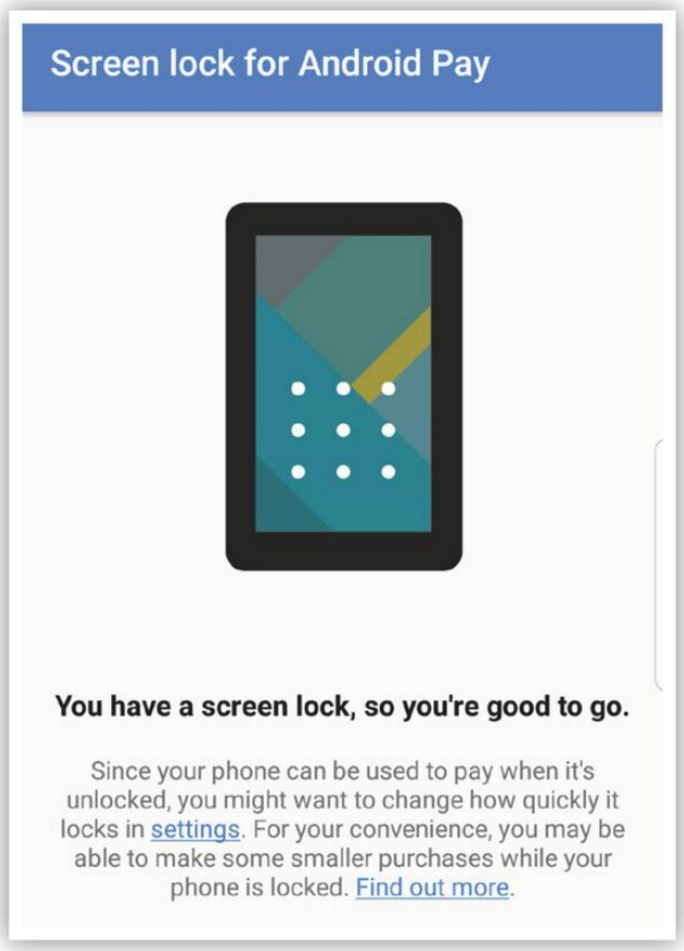
1 You will need to make sure that you have your credit or debit cards close at hand and have all the details available: account numbers, sort codes, security numbers, etc. You will also need to download the Android Pay app from Google Play, if you don't already have it on your phone. Setting up Android Pay can take a little time, mainly due to the security questions and settings.



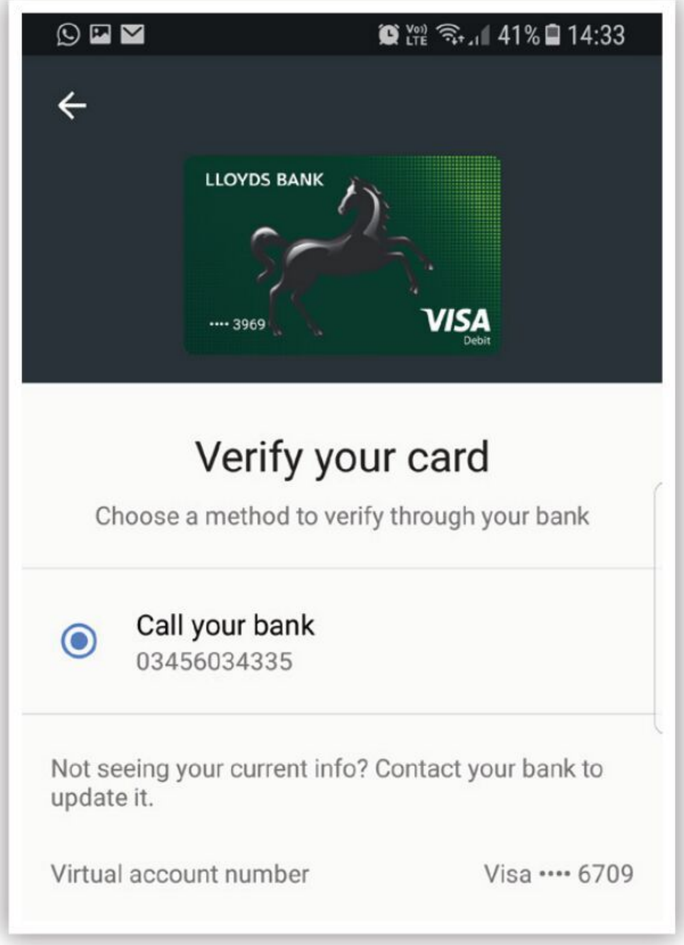
2 Once installed, tap the app icon and then Get Started and choose the Google account to use with the app (if you have more than one). If you already have a credit or debit card registered to your Google account it will be displayed next, along with the option to add a different card. If you don't already have a credit card attached to your Google account, you can add one later.



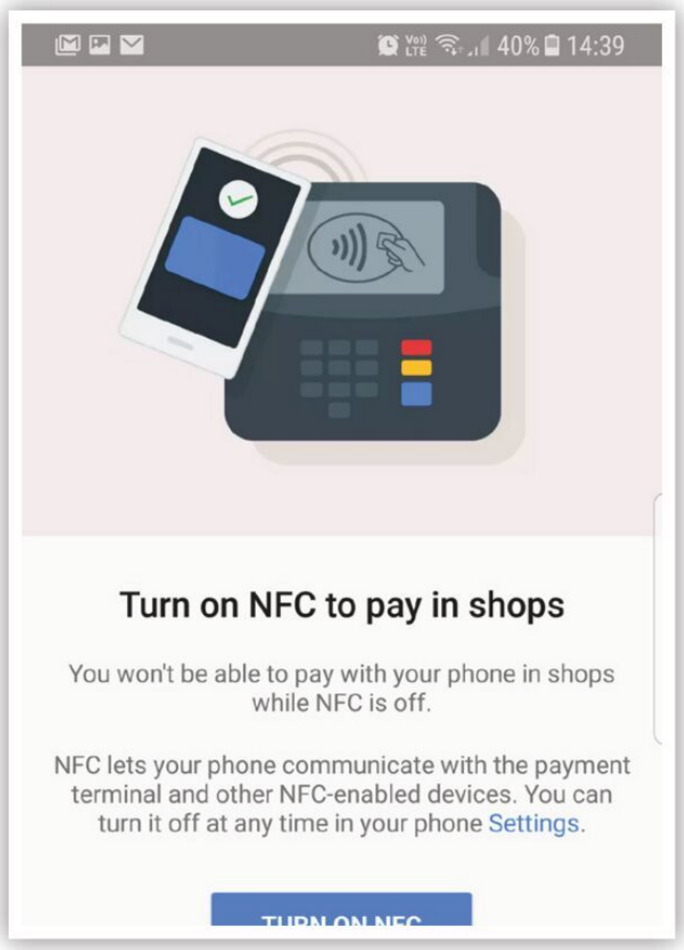
3 Whichever option you choose, you will have to add information, including CVC codes and other security information: we can't show a screenshot of this process, due to a security feature that prohibits the information being captured. Be careful to add the exact information required. Complete the information requested and accept the terms.



4 If you don't already have a screen lock set up on your phone, you will need to set one up now, for an additional level of security on top of the app security. It is a good idea to set the screen lock delay to zero. In some cases, small purchases can be made even when the phone is locked.



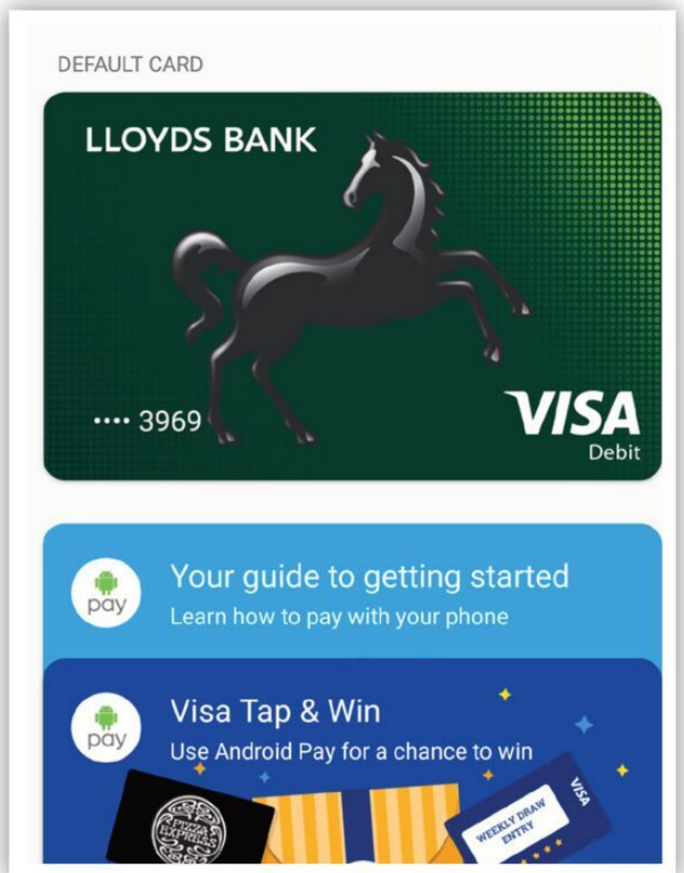
5 The next step is to verify your phone with your bank. In most cases, you will need to call a number specifically for Android Pay verifications but this can vary between different banks and card issuers. The number should automatically be entered into your phone dialler. Call and follow the instructions.



6 Once verified, the last thing you need to do to start using contactless Android Pay in stores that offer the service, is to enable NFC. NFC, or Near Field Communication, allows your phone to communicate with the contactless terminals. Either turn it on here or turn it on in your main settings menu.

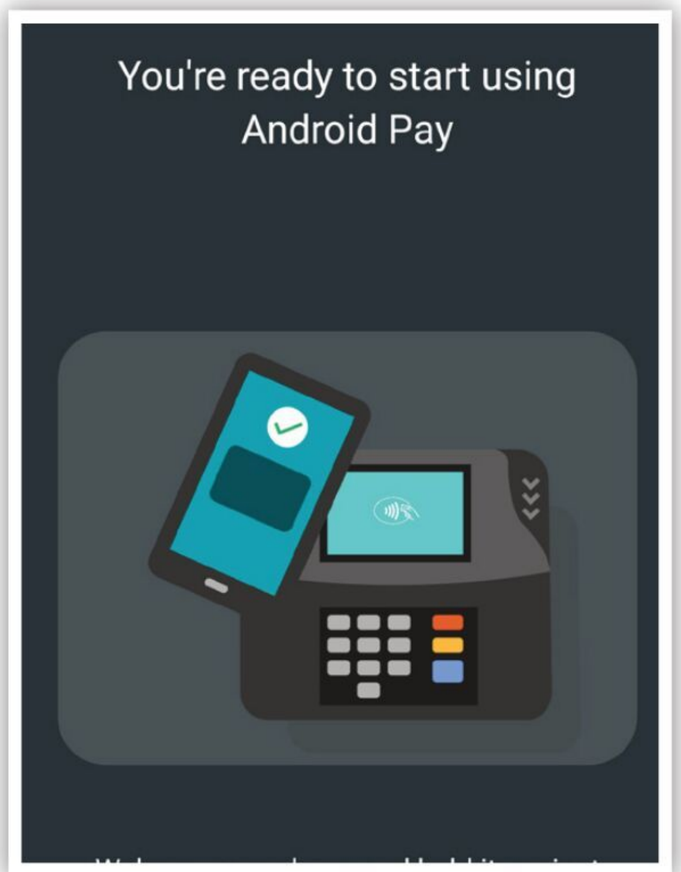
Security and Advantages of Android Pay

Android Pay is not only secure, it also makes shopping easier, whether you are buying a loaf of bread at your local supermarket or the latest fashions online.



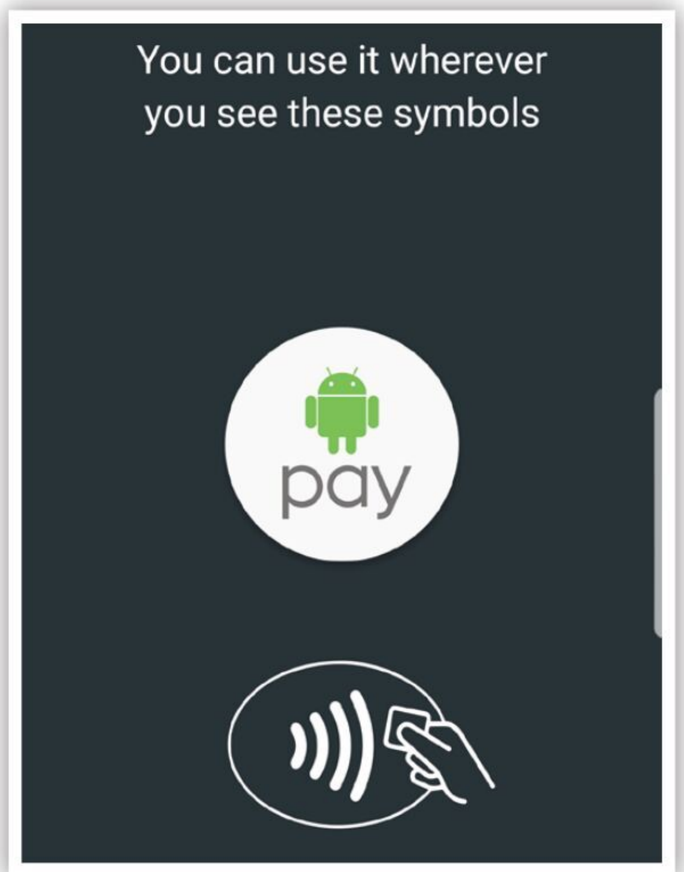
Purchase Tracking

Once you've made a purchase, you'll see a payment confirmation that shows you exactly where a given transaction happened, along with the merchant's name and number, making it easy to spot any suspicious activity.



Tokenisation

When you use your phone to pay in stores, Android Pay doesn't send your actual credit or debit card number with your payment. Instead it uses a virtual account number to represent your account info, so your card details stay safe and secure.



Simple App Checkouts

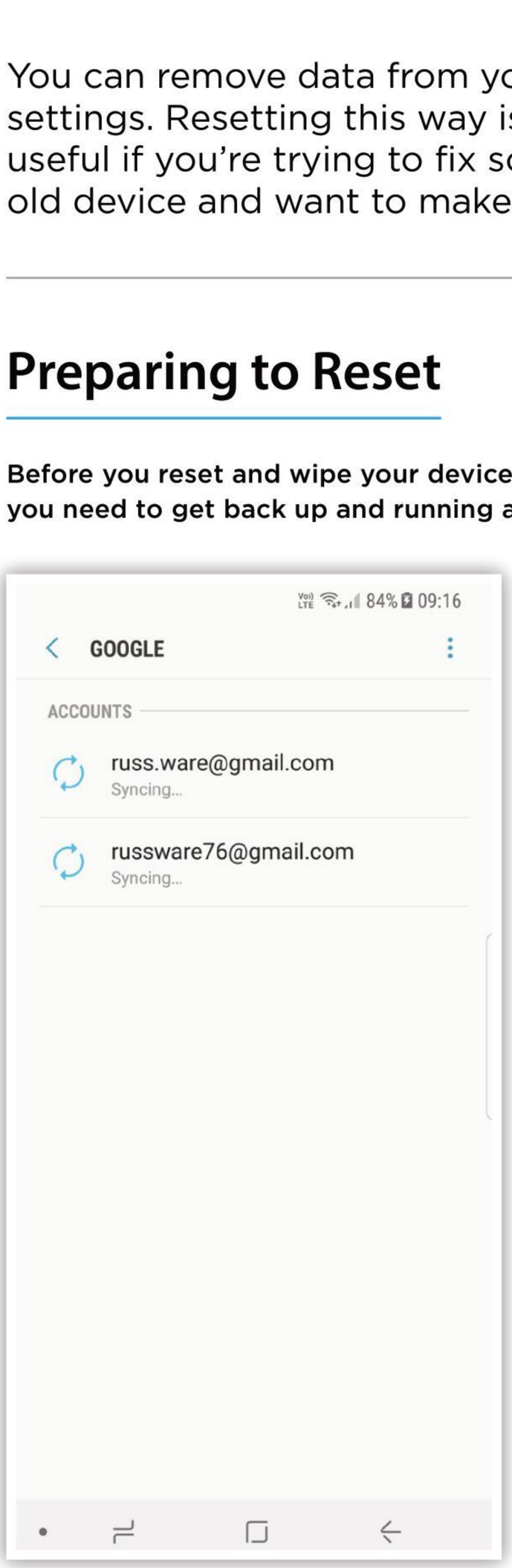
Android Pay makes it easy to check out in apps and online. There is no need to enter your card details every time you buy something. When you're shopping in your favourite app just choose Android Pay (if available) at checkout and save yourself some time.

Erase and Reset an Android Device

You can remove data from your Android phone or tablet by resetting it to factory settings. Resetting this way is also called ‘formatting’ or a ‘hard reset’. A factory reset is useful if you’re trying to fix some persistent issues or are planning to sell or give away an old device and want to make sure that everything of yours has been removed.

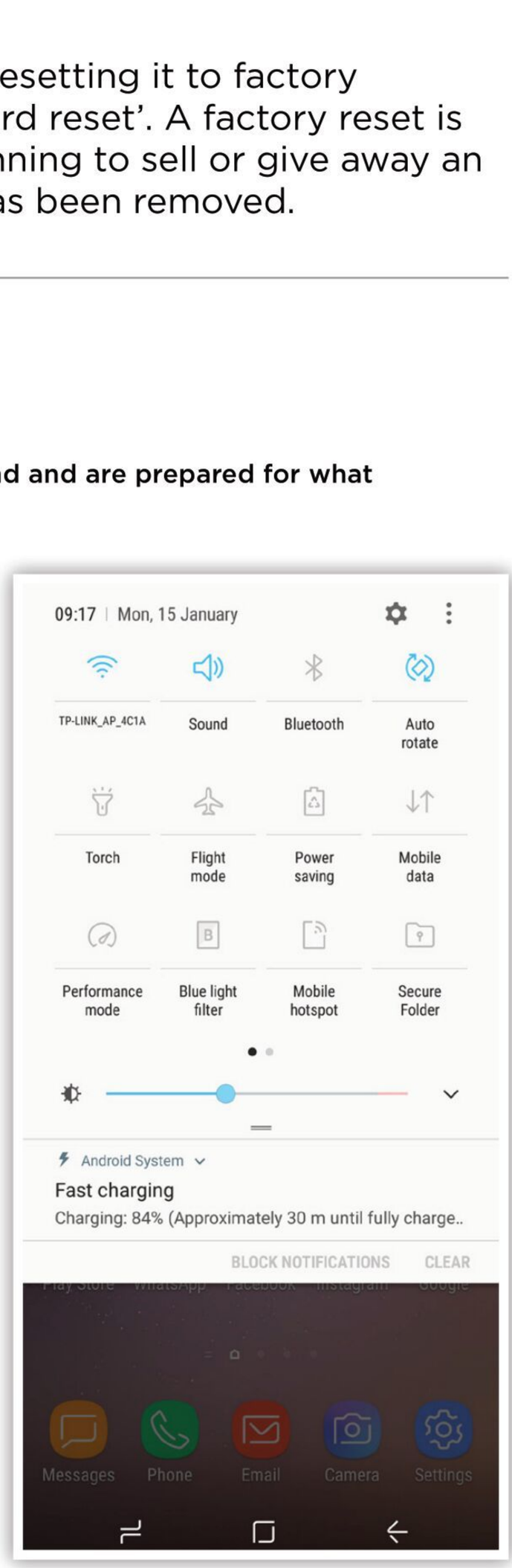
Preparing to Reset

Before you reset and wipe your device you need to make sure that you understand and are prepared for what you need to get back up and running afterwards.



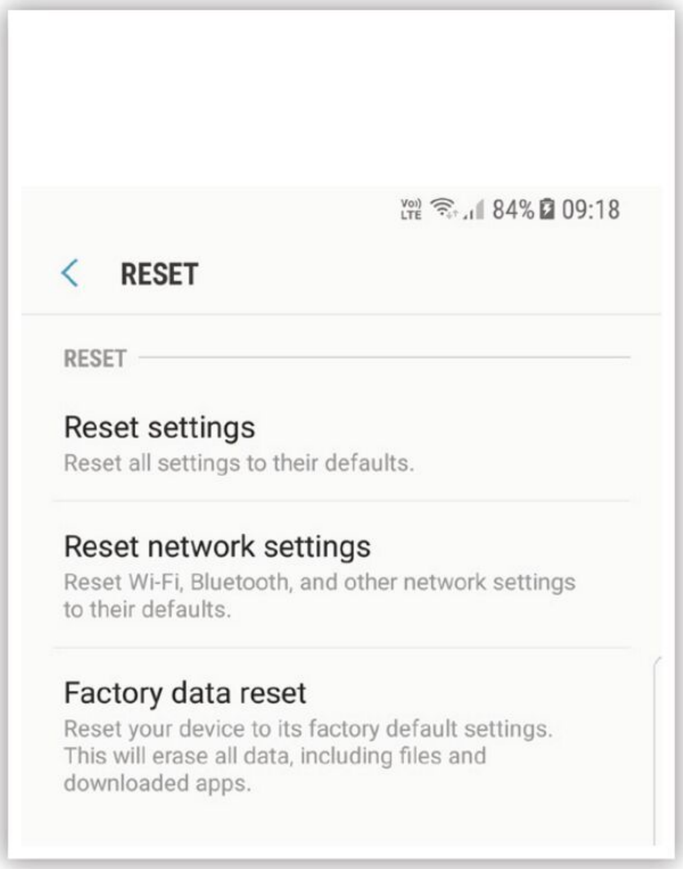
1 To show that it’s you doing the reset, you’ll need to enter security information. If you can’t enter the information, you won’t be able to restore your data to the device. Therefore, you will need to know the Google account information that is currently being used on the device.

2 A factory data reset will erase your data from the device. While data stored in your Google account can be restored, all apps and their data will be uninstalled. Open your device’s Settings app, tap System > Backup. Turn on Back up to Google Drive.

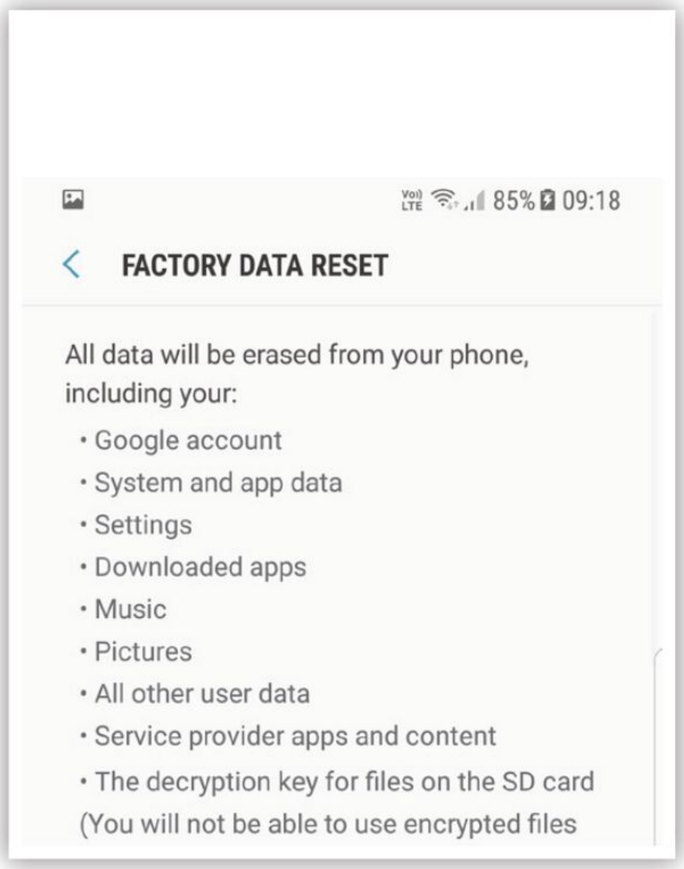


3 A full factory reset can take a long time (up to an hour), so plug your device into a power source and keep it plugged in until the reset completes; ensure you connect your device to Wi-Fi or mobile network. When the reset completes, you’ll need to be connected to sign in to your Google account.

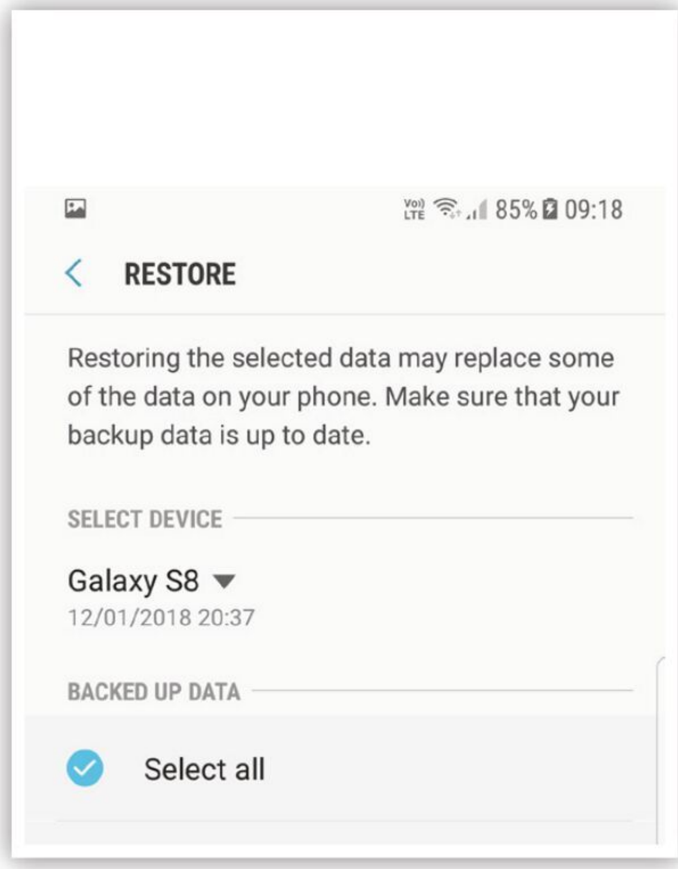
Factory Reset Your Device



1 Open your device's Settings app and tap System > Reset. If you have one set up, you may need to enter your PIN, pattern or password at this point, to tell Android that it is you trying to reset the device. On some devices, factory reset may be found under the Backup & reset heading.



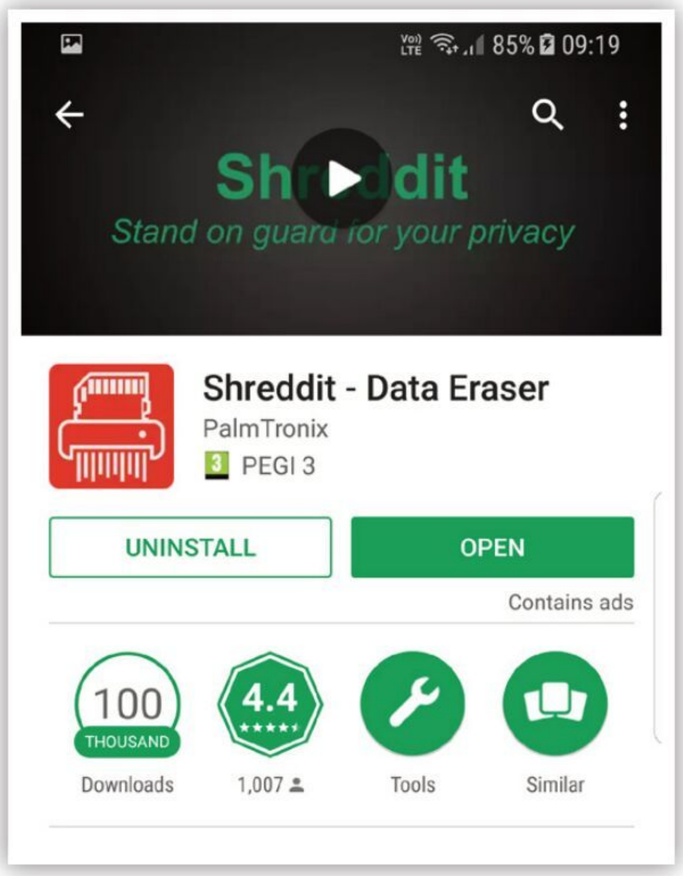
2 Tap Factory data reset > Reset phone or Reset tablet. In some cases, this is where you will need to enter your PIN, pattern or password. To erase all data from your device's internal storage, tap Erase everything. When your device has finished erasing, pick the option to restart.



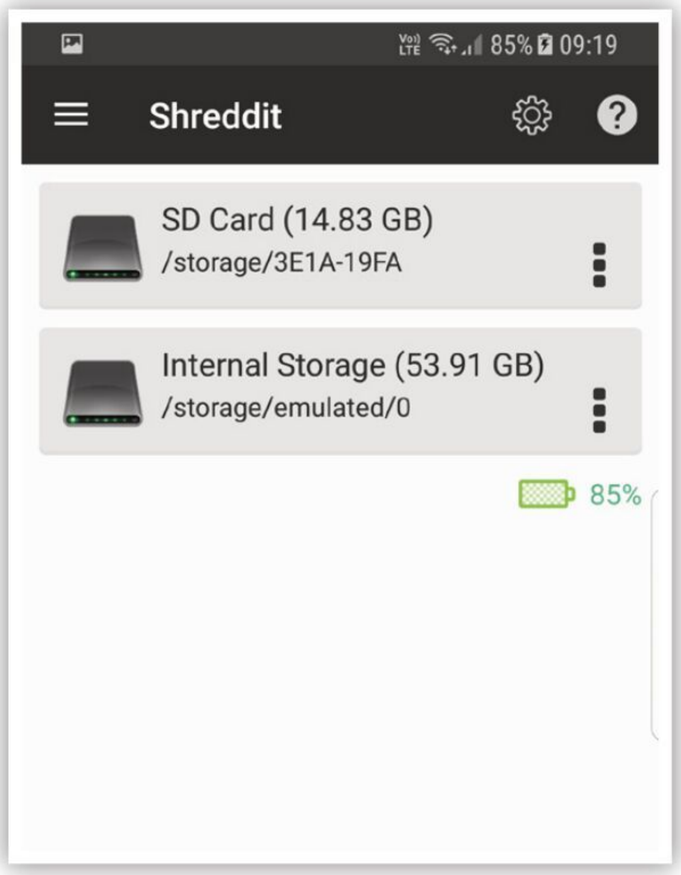
3 If you are resetting the device to sell or give away, you are finished. If not, you need to set up and restore your backed-up data as with a new device. If you can't open your device's Settings app, you can try factory resetting your Android device by holding its power and volume buttons.

Erasing Specific Data

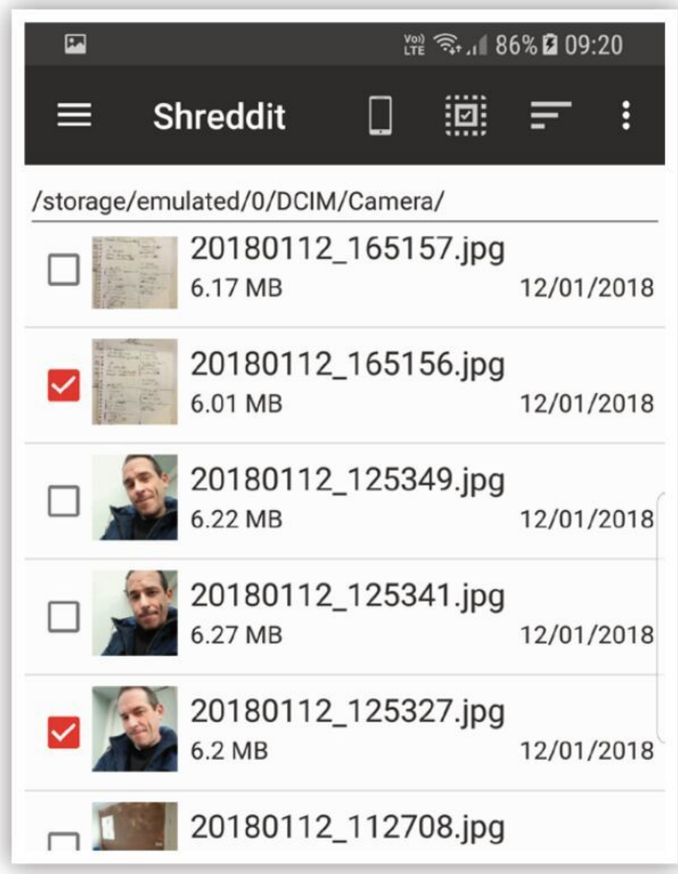
If you don't want to factory reset your device but do want to permanently remove sensitive data and information from the device, Shreddit – Data Eraser is a useful tool to have installed.



1 SHREDDIT is a data eraser which securely deletes files leaving them irrecoverable. This tool erases your data completely and protects if it falls into malicious hands. It deploys quick shredding algorithms that shred huge data volumes PERMANENTLY in a matter of seconds.



2 When launched first time the shredder will ask for permission to access photos, media and files on your device. The first screen here mounts your internal and external storage with their mount points path and their total capacity or size. Internal Storage is where you will find app data.



3 Open the relevant folder (DCIM for camera images, etc.) and select the items you want to erase. When you have selected them, tap the red Shred button at the bottom of the screen. Shredding may take a while, so be patient and wait for the process to finish before closing the app.

5 Things That Can Affect Your Phone Signal

There are several things that can affect how good your cell phone signal is, things that you might not automatically consider when a call drops or when your phone shows the dreaded no bars. If you know and understand the types of things that can affect signal strength, you will be in a better position to make sure your calls all get through.

1 Terrain

Your mobile phone communicates using simple radio waves and these travel in straight lines from your phone to the nearest visible cell tower. Anything that gets in the way can cause loss of signal strength or even signal failure. For example, if your nearest cell tower was a mile away, but hidden behind a hill, and the next visible tower was five or ten miles away, your phone would be forced to connect to that one, rather than the much closer tower. In this case, distance would also begin to have an effect on signal strength. If you lived in a valley and all of the cell towers were outside the valley, you would effectively be in a Dead Zone.

You might think that living in a city would be like being in an unnatural valley all the time but there are usually smaller radio towers or antennas placed all over cities, so the signal never has to travel far. Radio signals can also bounce off buildings and round corners, so you might not even need line-of-sight with a tower to get a signal. Again, in this instance, signal strength would be lost.

2 Distance

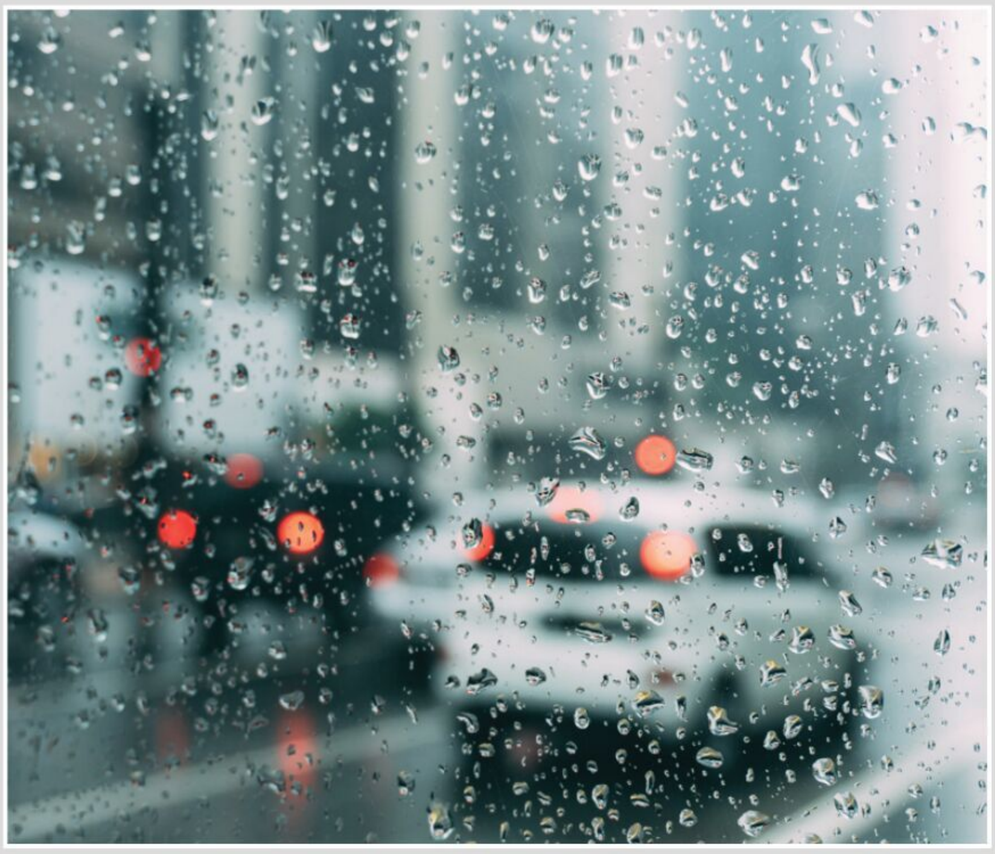
The distance they need to travel is always a factor with any radio waves and your phone signal is no different. The atmosphere is full of particles and even in perfect conditions, i.e. no dust, rain or snow, the furthest distance to the nearest tower will need to be less than 25 miles if you expect any sort of signal. Theoretically, a radio wave from a mobile phone could travel 45 miles but depending on the network carrier, components used and the receiving equipment, the realworld distance could be as low as 20 miles.

The more powerful the transmitter, the further the radio waves will travel but there is a limit to how powerful a smartphone radio can be. In a city, distance is rarely a problem but in the great outdoors, or even just in rural towns, this is probably going to be the biggest factor affecting the quality of your mobile signal.

3 Weather

Following on from the effect of distance on your mobile signal, is the effect that weather can have. Just how much effect the weather has on your signal depends very much on the type of weather. For example, heavy cloud can cause problems due to complicated sounding things like changes in radio propagation and signal reflection. Heavy rain can really get in the way of radio waves and even light rain will have some effect, particularly if your device is using the high frequency ranges used by 4G.

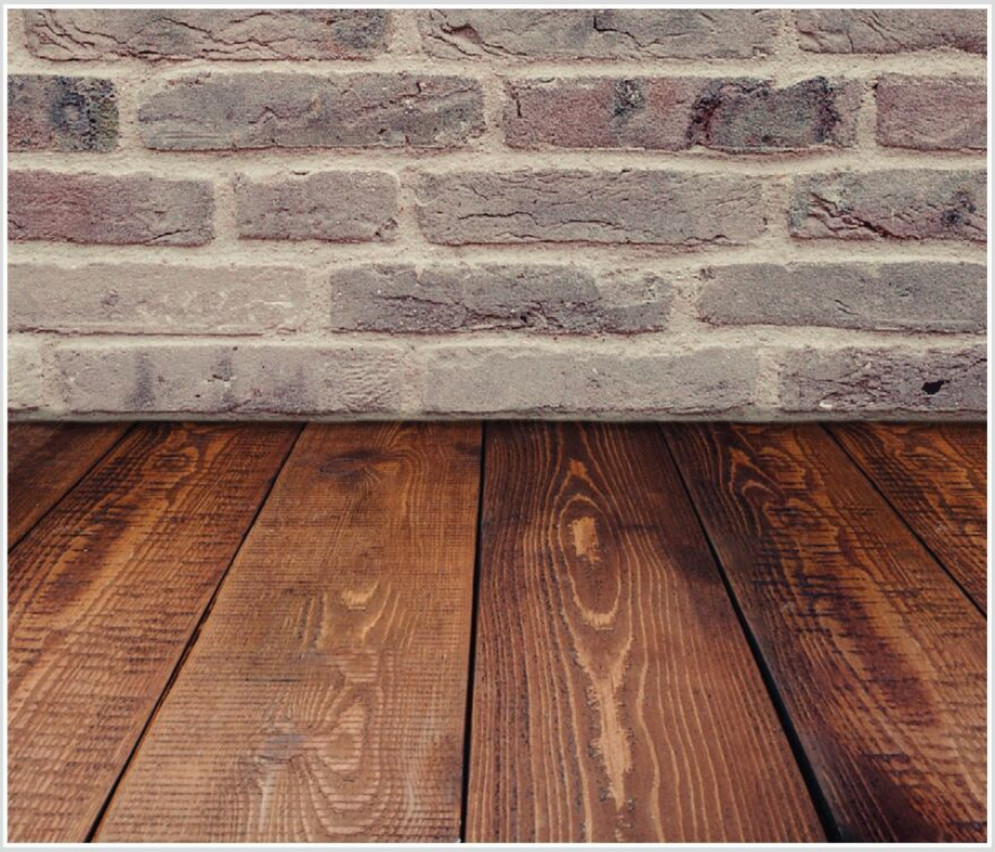
In general, water in any form will reduce how far radio waves can travel and in particular the high frequency waves used by mobile phones. Water vapour will actually absorb energy from the radio waves, converting it into heat, removing its strength.



4 Building Materials

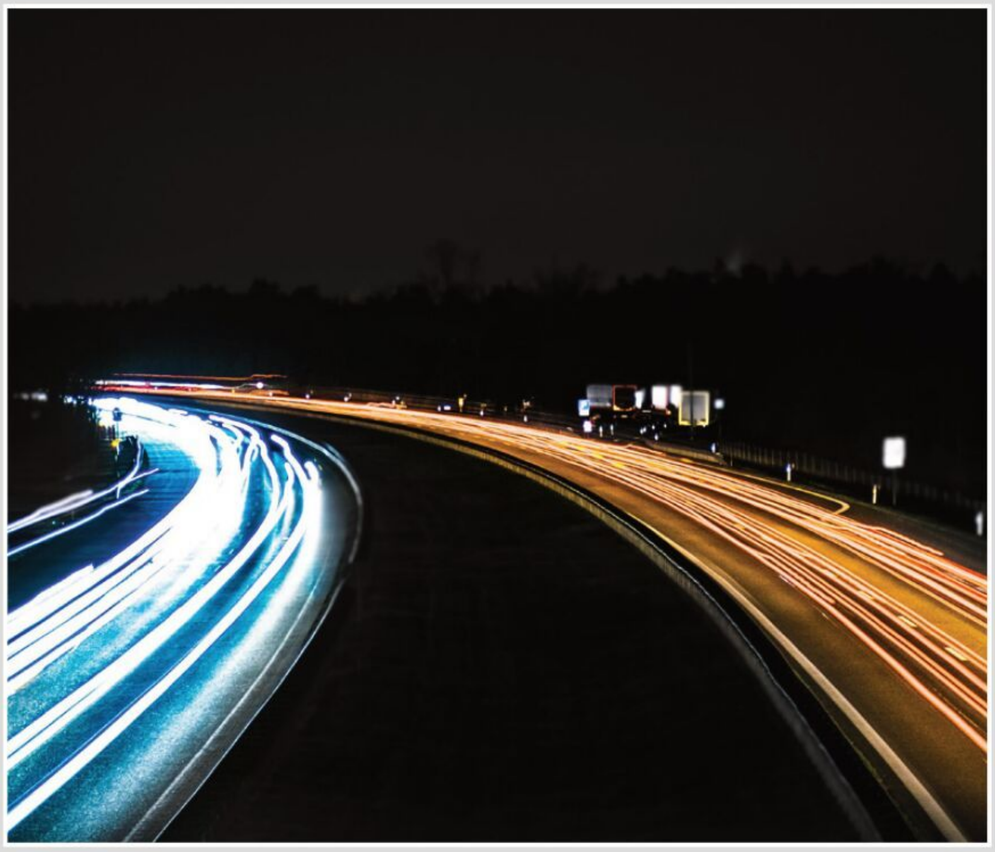
Being inside a building will, to at least some degree, effect how well the signal travels. Commonly used building materials like concrete, steel, brick and plaster are all great at blocking radio waves. Walls of mainly steel construction, or concrete walls with lots of steel reinforcing bars inside, will have the worst effect on signal. This is especially true in rooms such as basements, due to the lack of large windows.

If the lack of signal is just inside the building, i.e. you can get a good signal in the garden or on the balcony, it may be worth investing in a signal booster. This is a fairly simple device that receives the signal inside the building and passes it through a cable to an externally placed antenna. It can then be sent to the nearest mast; If you don't even get a good signal outside, a signal booster won't help.



5 Movement Speed

To make a call, your phone needs to be able to send and receive signals to a tower. This back and forth happens incredibly quickly, so if you are standing still or even moving slowly, there is no problem. However, as soon as you start to move at speed (in a train for example), the constant changes in position can begin to cause issues. Travel at over 60mph and you will probably notice a distinct drop in call quality and anything over 100mph will probably see calls being dropped completely or at the very least, filled with stuttering and interference. Of course, you also have the added problem of potentially moving behind something that obstructs the radio waves as you travel.

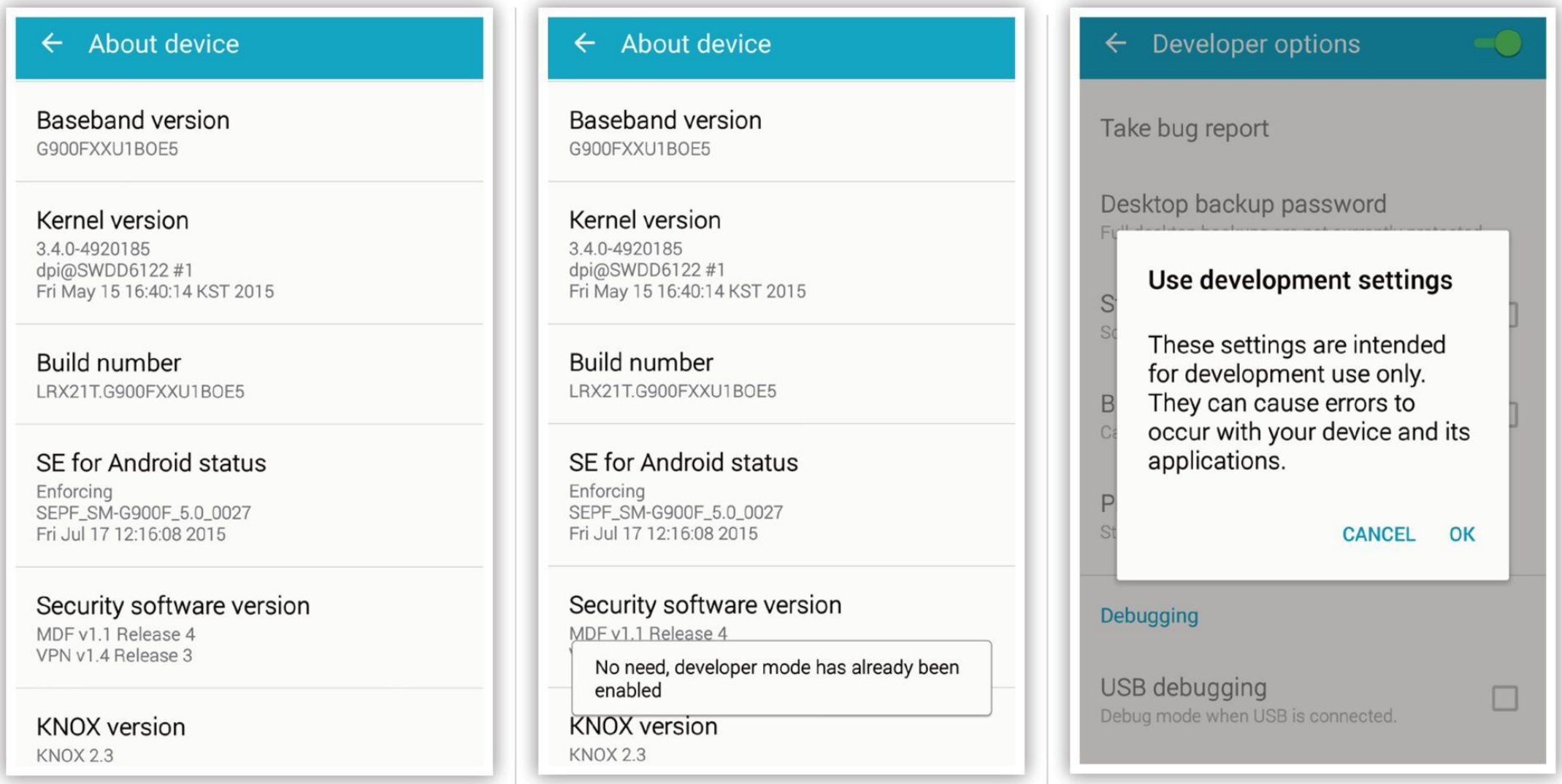


Using the Developer Options

Every Android smartphone and tablet contains a secret set of options - the Android Developer Options. As the name suggests, these are intended principally for developers of apps, used for debugging or simulating certain conditions. There are, however, several options within this menu which more adventurous Android users can utilise to good effect.

Enable Developer Options

If you choose to do so, before you can start to use the developer options, you will need to unlock and activate them in the settings.



1 Open the main settings app and locate the About Device menu (usually found at the bottom of the settings list). This menu gives you access to lots of information about your phone or tablet. Scroll down until you see the Build Number section.

2 Tap on the Build Number heading ten times quickly. As you do so, you will see a message appear counting down and then saying “You are now a developer”. Continue to tap the build number heading and the message changes to “You are already a developer”.

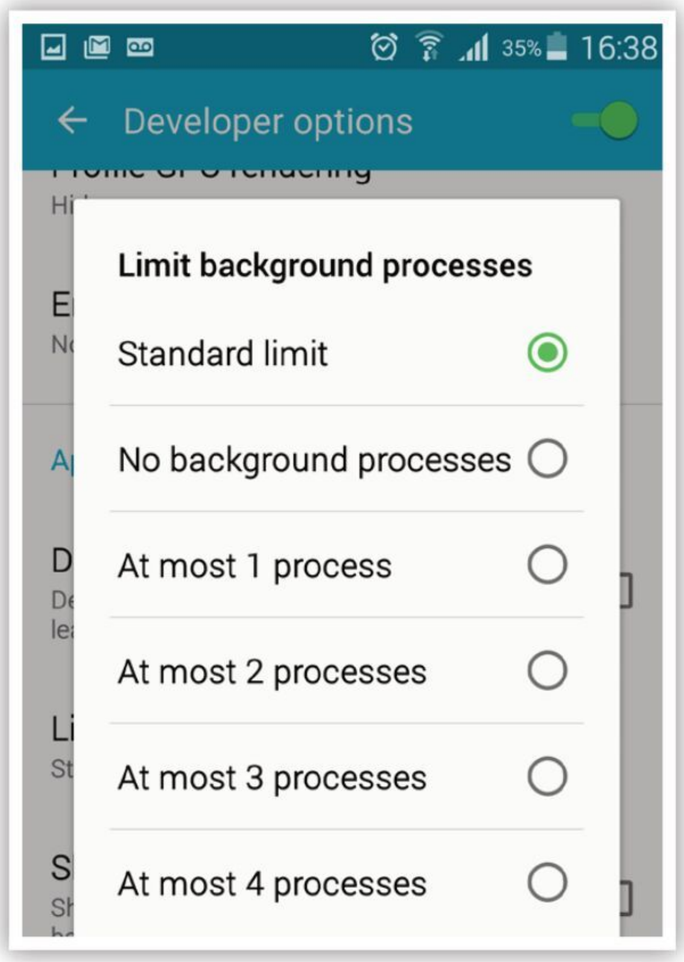
3 Tap Back and look for the new heading Developer Options in the main settings. Once you open the developer options menu, you will need to use the slider at the top of the screen to enable access to them and allow them to be modified.

What is ADB?

Android Debug Bridge (adb) is a versatile command-line tool that lets you communicate with a device (an emulator or a connected Android device). The adb command facilitates a variety of device actions, such as installing and debugging apps.

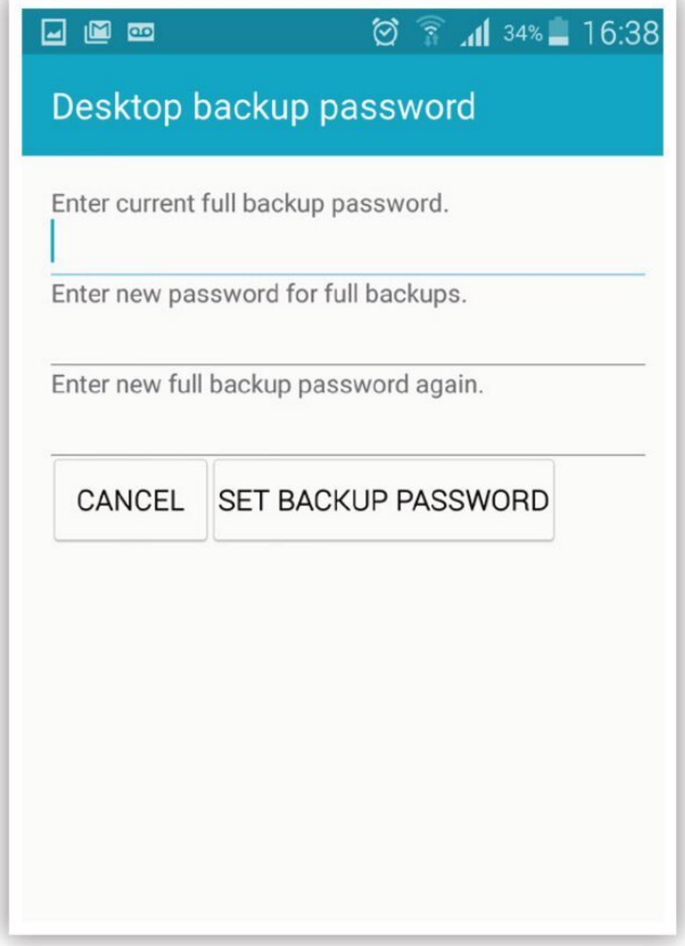
Useful Developer Option

Not all of the developer options are worth changing, or indeed should be changed unless you really know what you are doing.



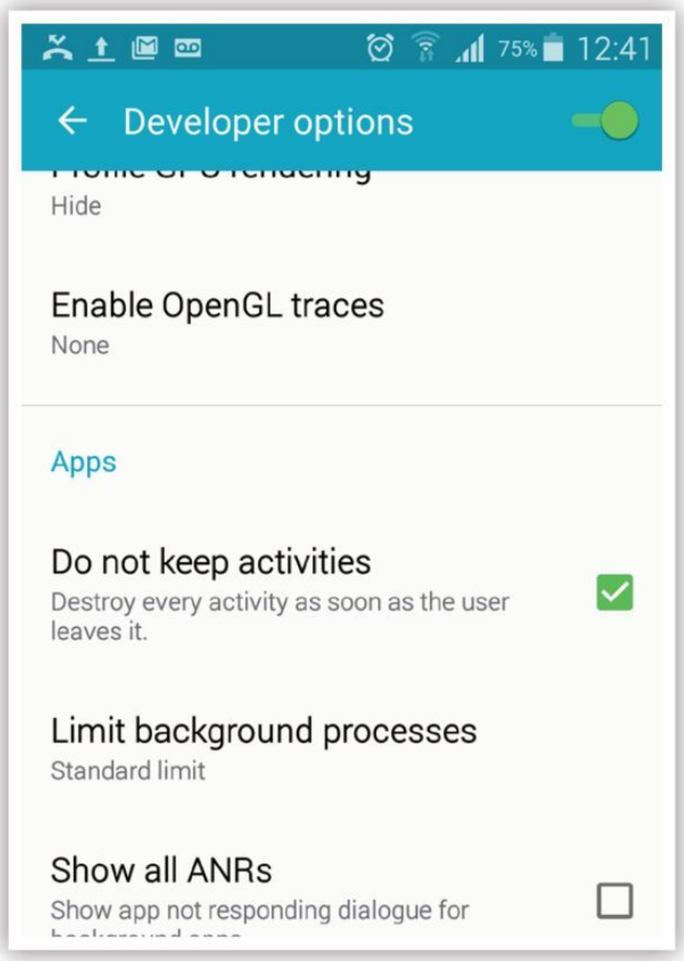
1 - Limit Background Processes

- Scroll right down to the bottom of the list and you will see Limit Background Processes. This option lets you set how many processes can run in the background on your device at any one time. Be aware that too small a limit might be counterproductive.



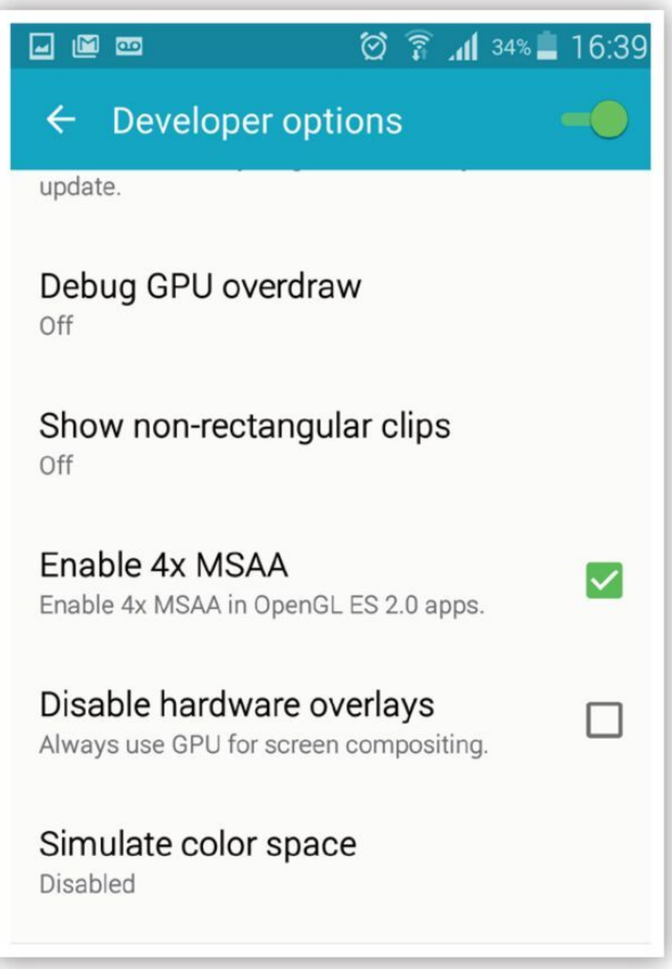
2 - Desktop Backup Password

- The Android Developer Options allow you to backup and restore to your PC things such as apps and their associated data. This option requires a password for such backups. You will need to ensure that your device can connect to your computer successfully.



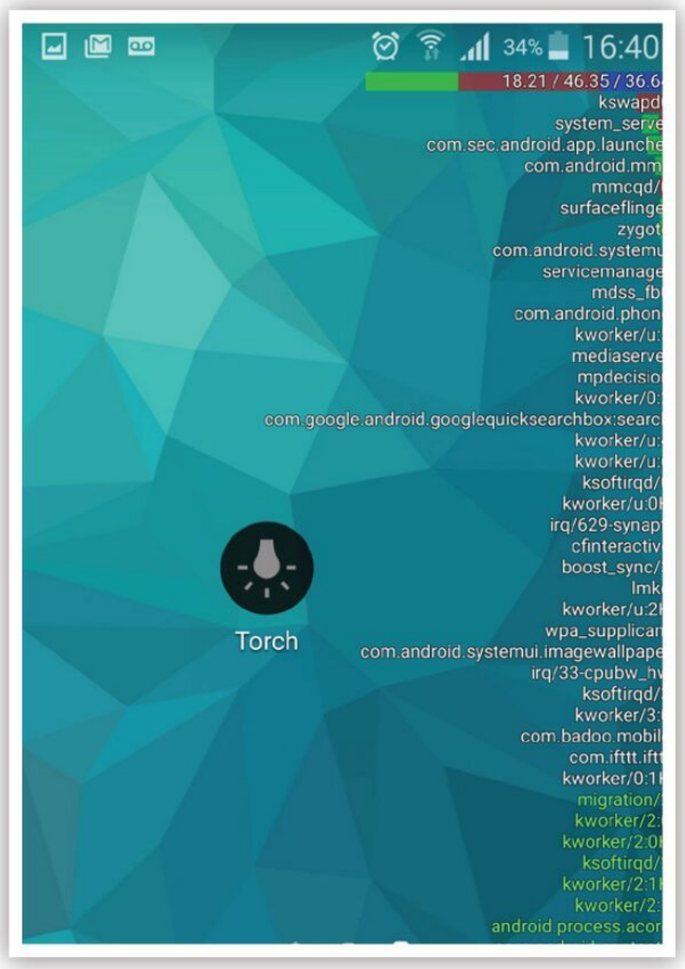
3 - Don't Keep Activities open

- Although you need to be a bit careful about using this setting, it can be useful if your phone struggles after heavy use. This option force-closes every application as soon as you leave its main view. Use either this or the Limit Processes option, not both.



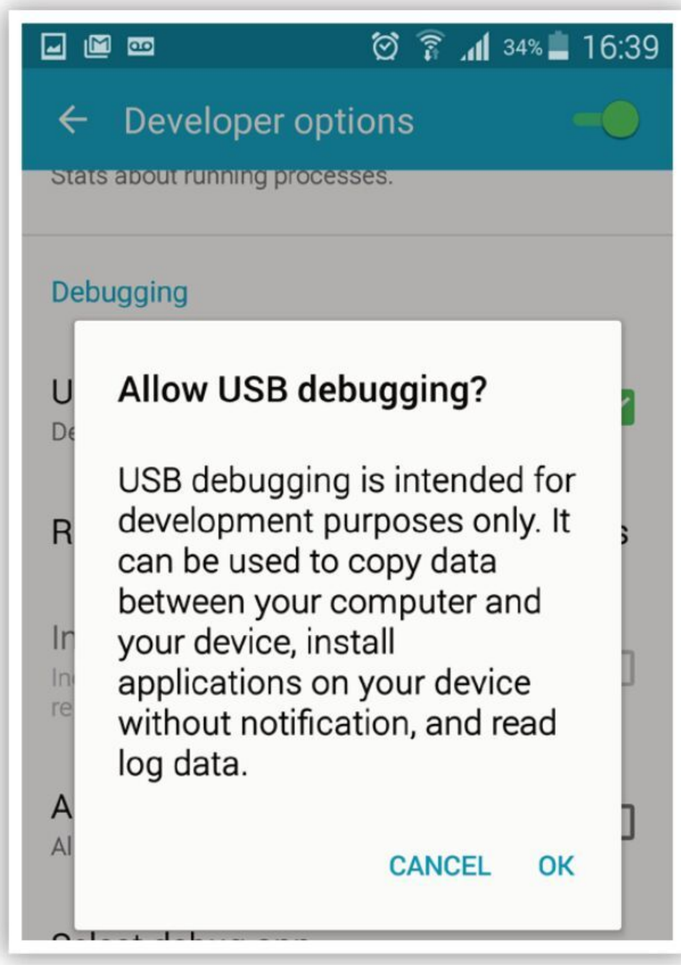
4 - Force 4x MSAA

- If you have a powerful phone or tablet and play a lot of games, this setting, which forces multi-sample anti-aliasing (MSAA), can be useful. It essentially makes things look better (and not just games), but puts more strain on the CPU/RAM.



5 - Profile GPU Rendering

- This setting draws a visual rendering of how hard the GPU is working over a period of time. You can either view on screen or save to a file. This can be useful if you are trying to work out what apps or features are causing battery drain or lag.



6 - USB Debugging

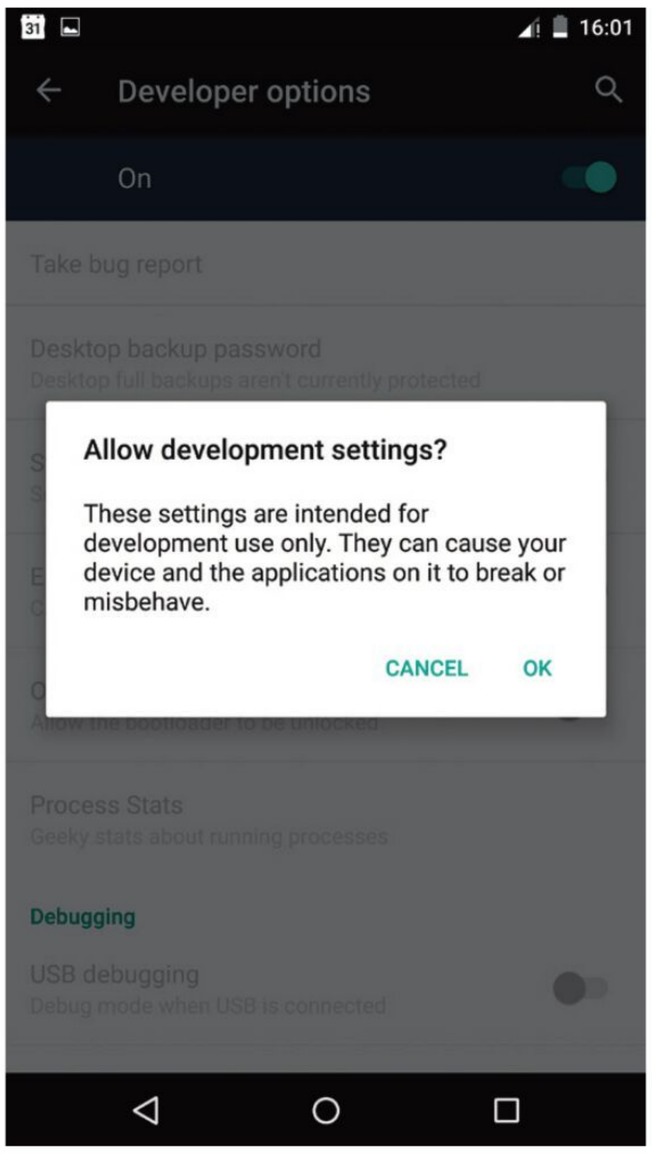
- Allows your Android device to communicate via USB to your computer via the Android Debug Bridge (ADB). You can also revoke USB debugging authorisations. This setting will need to be enabled if you plan to flash custom ROMs during rooting.

Speed Up Android Animations

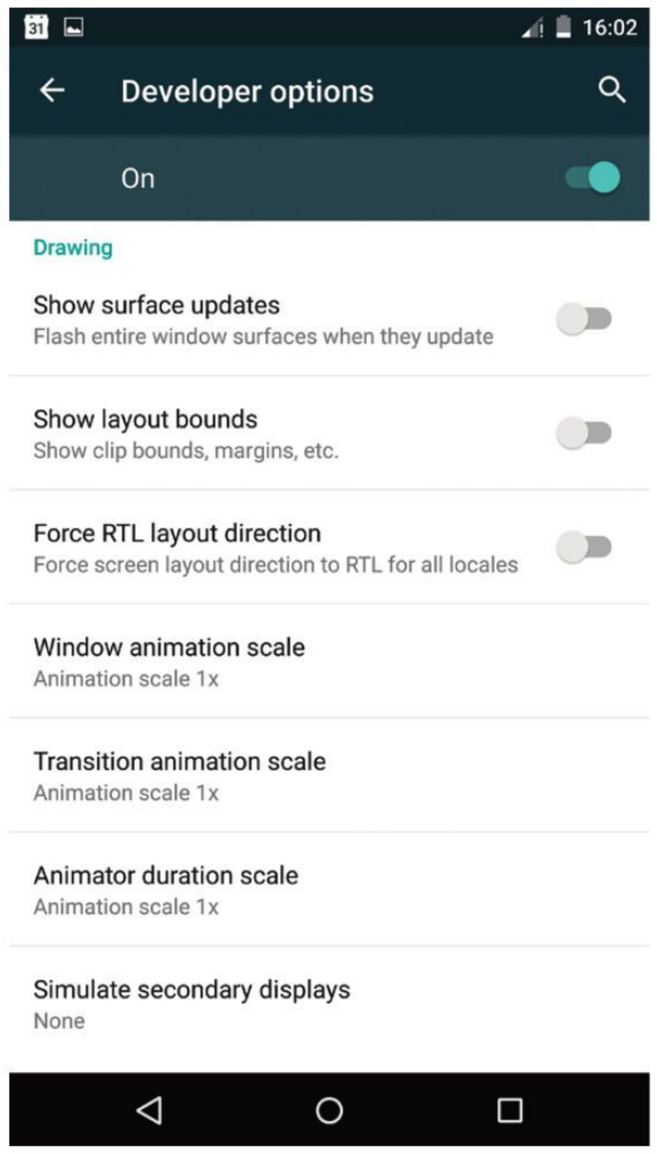
You may already know about the hidden developer menu available on all Android devices running version 4.0 or later of the OS. Within this initially confusing list of settings, you can find some really useful tools for making your device run faster and more smoothly, as well as a few simple tweaks to get the most from your phone or tablet. Here we will look at using animation settings to improve overall performance.

Modify Animation Settings

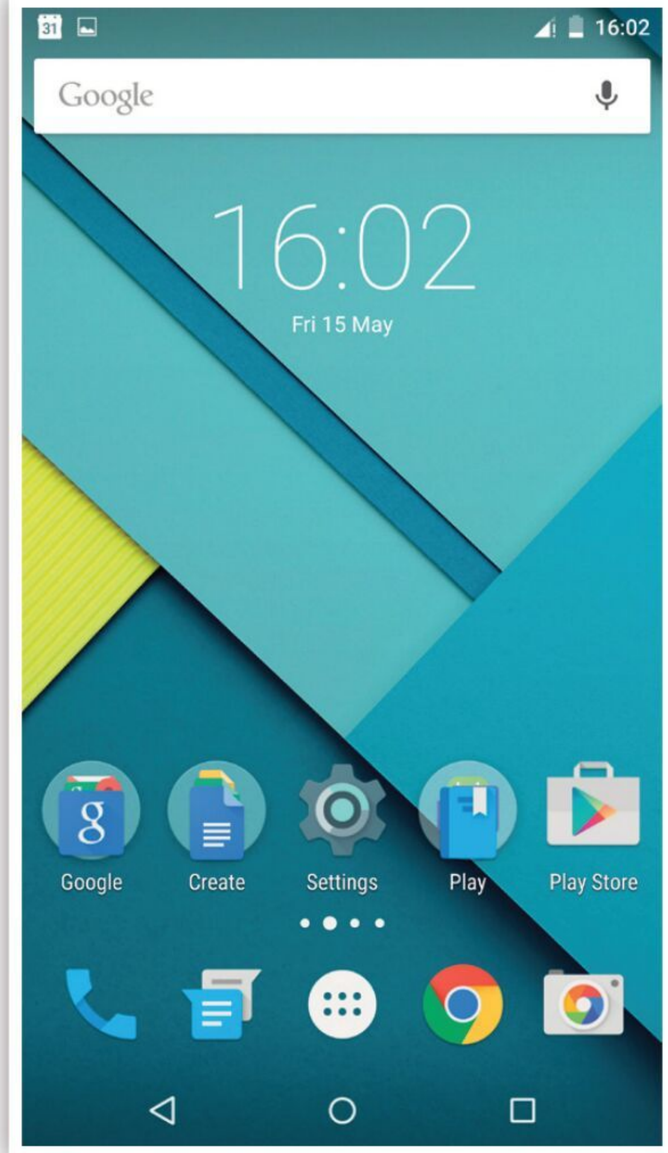
You can now begin to modify development settings, including the animation settings. It is a good idea to back up your device before continuing.



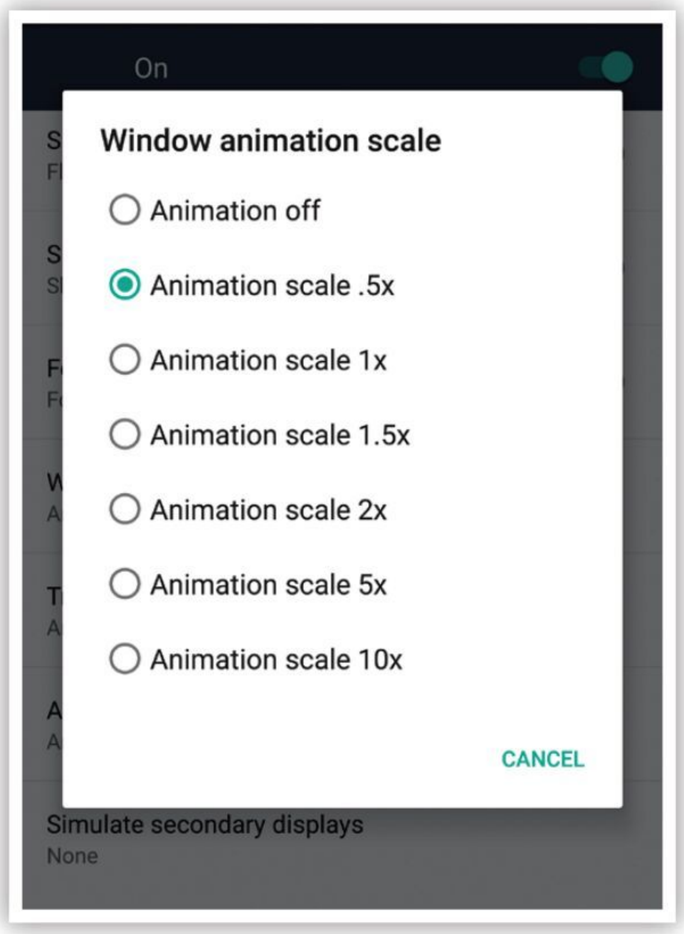
1 Whilst it may be tempting to play around with the settings here, we suggest leave everything alone until you know what the possible effects could be. And if you do decide to change developer options, change them one at a time and test the changes before altering anything else. Otherwise it can be hard to know what caused any problems that occur.



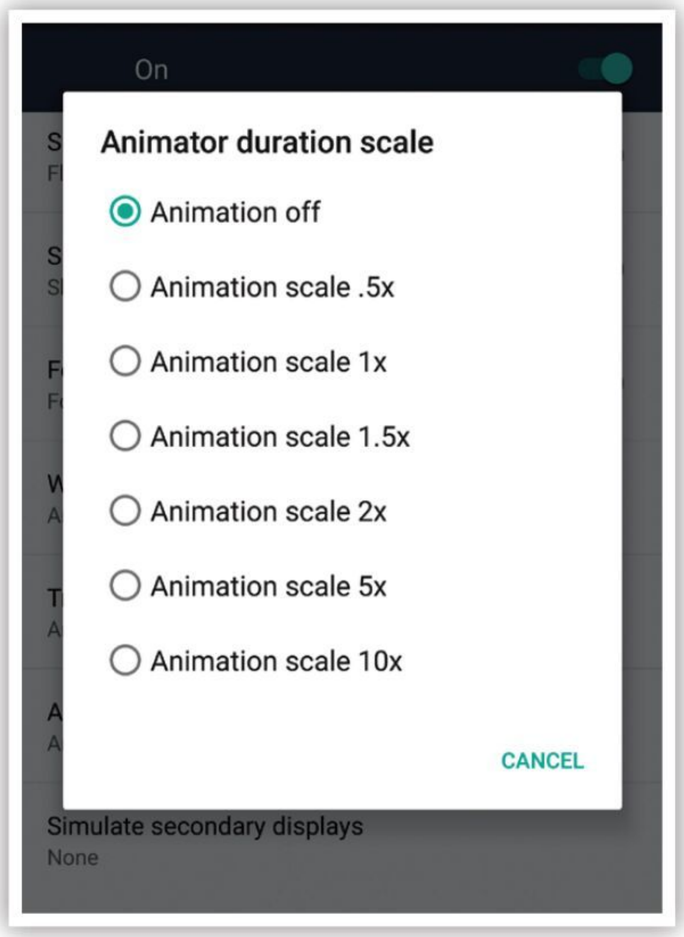
2 For this guide, we are looking at animation options, which can be found in the "Drawing" section about halfway down the list of settings. You will see three animation settings: Window animation scale, Transition animation scale and Animator duration scale. Each of these options will be set to "1x." This means animations running at normal speed.



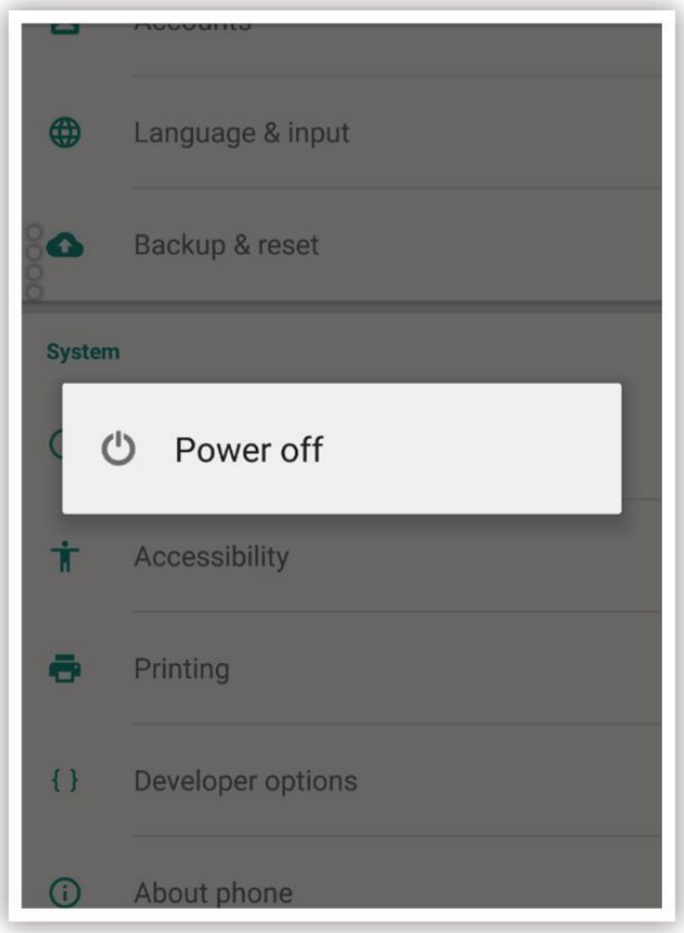
3 Before we go further, you should understand what is mean by animations on Android. Without animations, switching home screen panels, opening apps or scrolling would appear to be an instant switch from one screen to another. Animations provide the sliding effect of home panels or the grow effect when opening a new app.



4 Your device has to process these animations every time you switch screens or open an app. But by reducing the animation speed to ".5x", you can speed up all transition effects and not only improve how fast your device runs, but the shorter animation sequences will also make the device seem smoother.



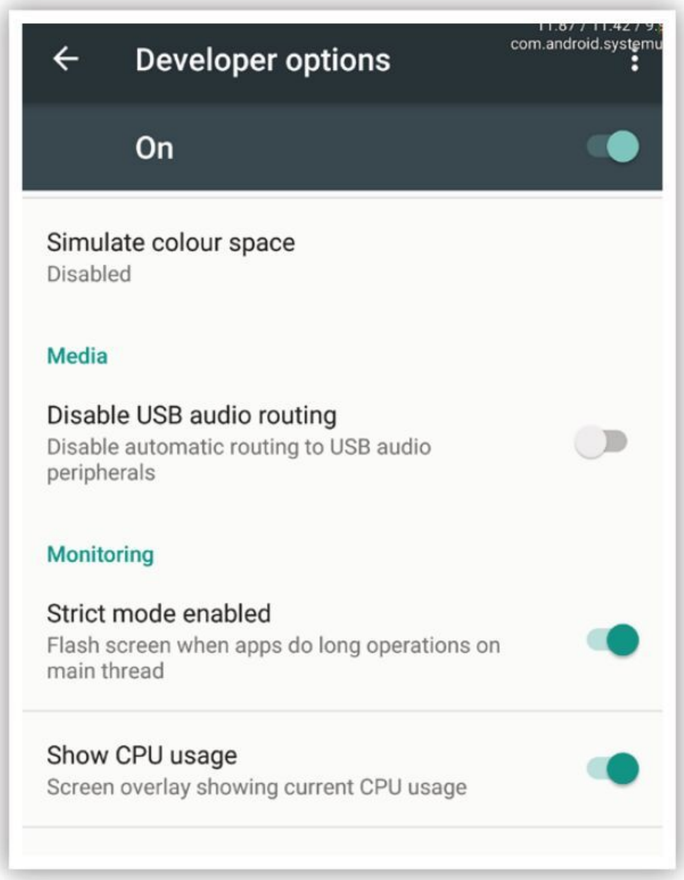
5 If you want to go further, you can change the animation scales to Off. You will speed up transitions and window animations to their fastest, but you will lose some of the smoothness of the operating system. Choosing .5x is a good compromise between speed and how your device looks when used.



6 If you find that the changes are causing problems, or if you are seeing no improvement in animation speed, try restarting your device. If this still doesn't help, go back into the settings > Developer Options, and reset all of the changes to their original state (or simply turn Developer options off).

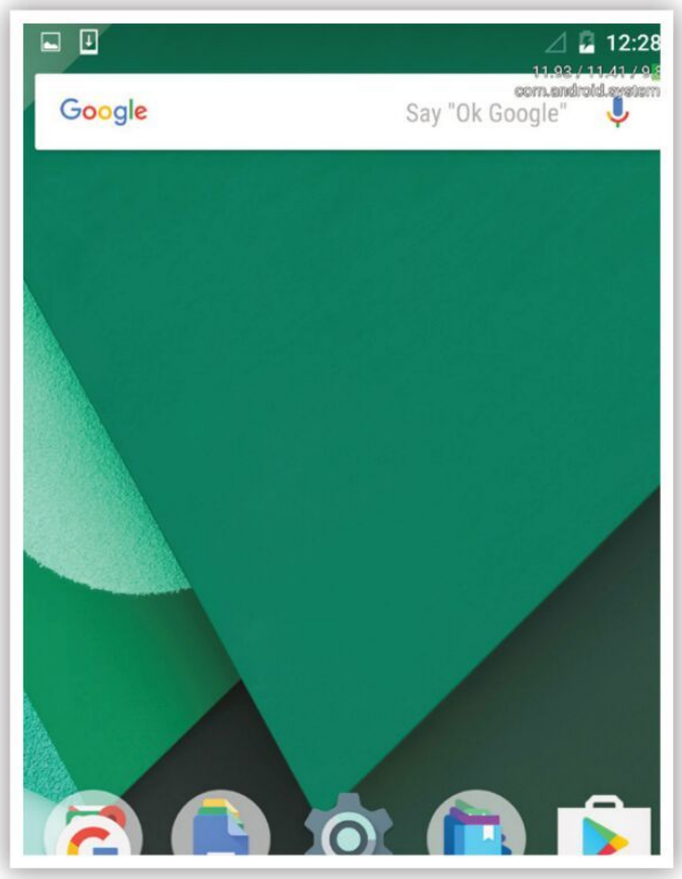
Monitoring Performance

There are also several options in the Developer settings that allow you to monitor the performance of your device. This is useful if animation settings cause problems.



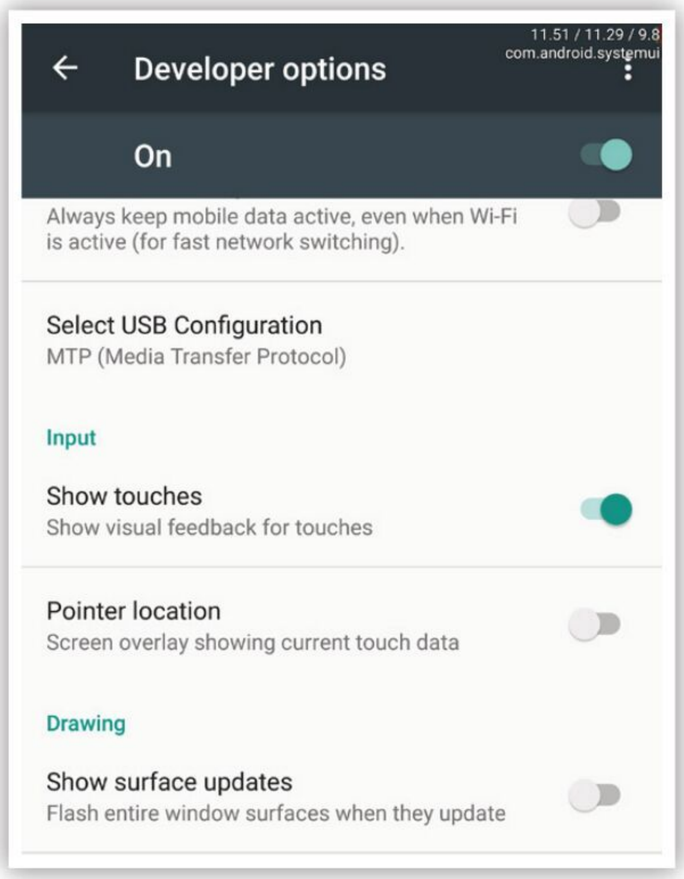
Strict Mode

Enabling this option in the Monitoring section of the Developer settings will cause the screen to flash when apps perform long, potentially heavy data use operations. This allows you to see whether app animations are causing system strain.



Show CPU Usage

This option puts an overlay on the screen that shows CPU (the main device processor) usage at all times. This will display as a red and green bar at the top right of the screen. It allows you to see which actions are causing the most CPU strain.



Show Touches

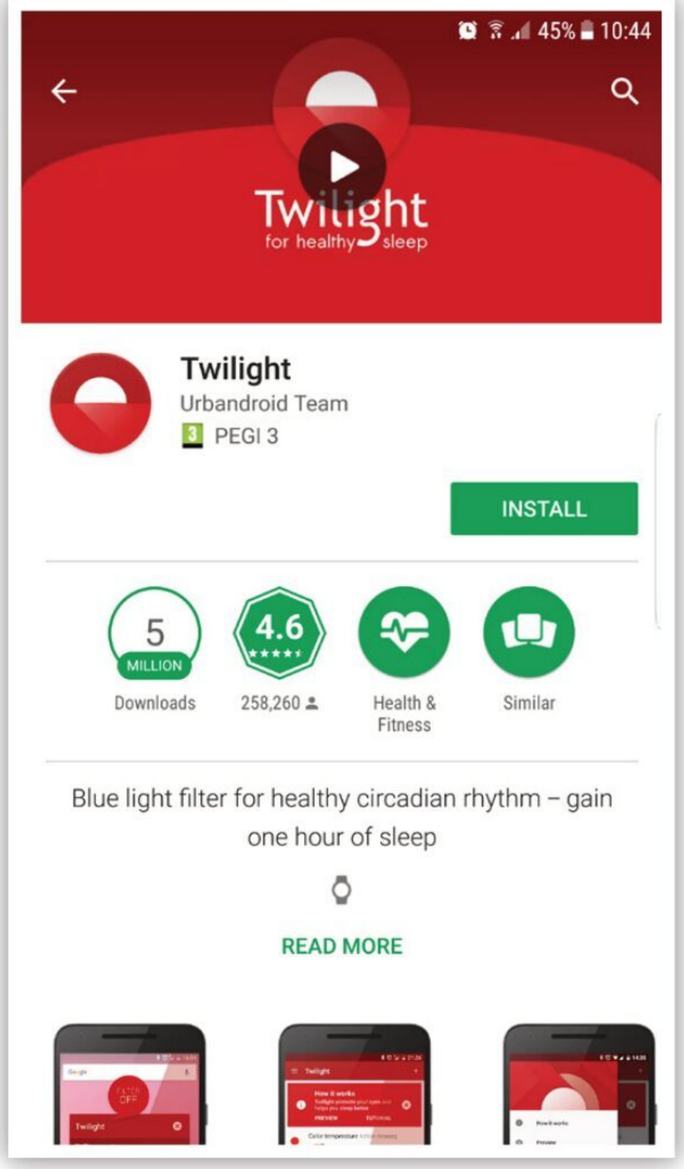
This option is in the Input section and enables screen touch feedback. By viewing where the screen registers your touches, you can monitor whether the system is working accurately. If touches are out of place, you can sometimes fix this by restarting your device.

Cut Blue Light with Twilight

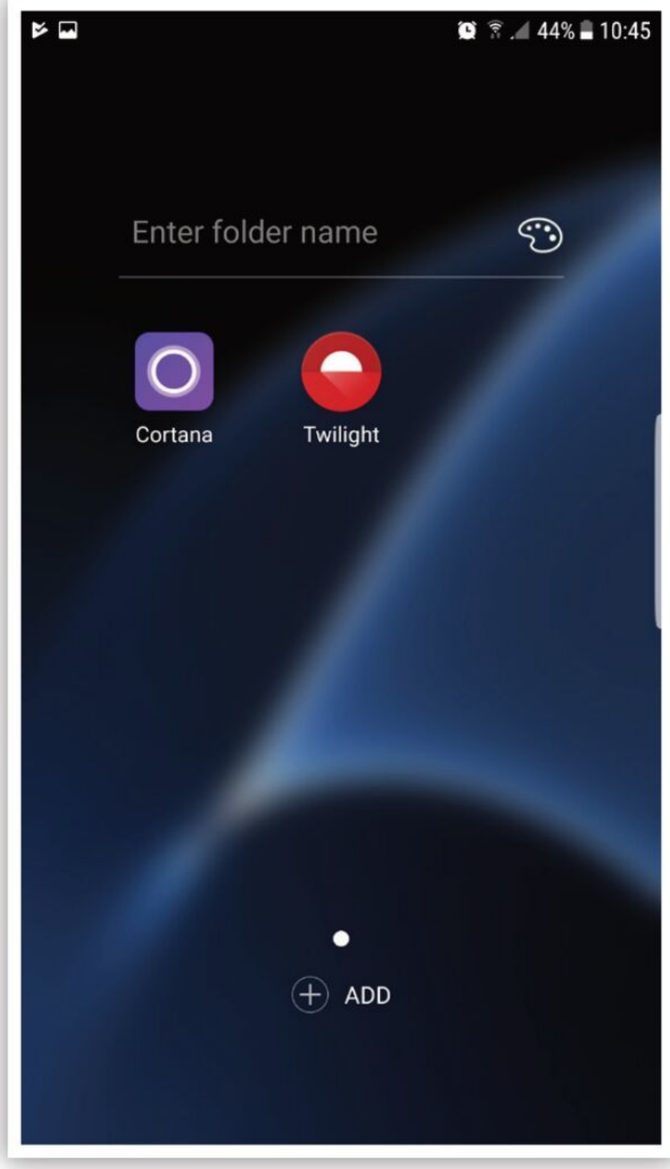
Blue light, the type of light given out by almost all LED screens, has been shown to hinder our sleep patterns. This means that using a phone or tablet late at night can actually effect your overall health. Luckily, some clever app developers have created a solution. Twilight, just like Night Shift on the iPhone, will shift the colours in the device display to the warmer end of the spectrum, making it easier on your eyes and producing less of the blue light.

Screen Shift App

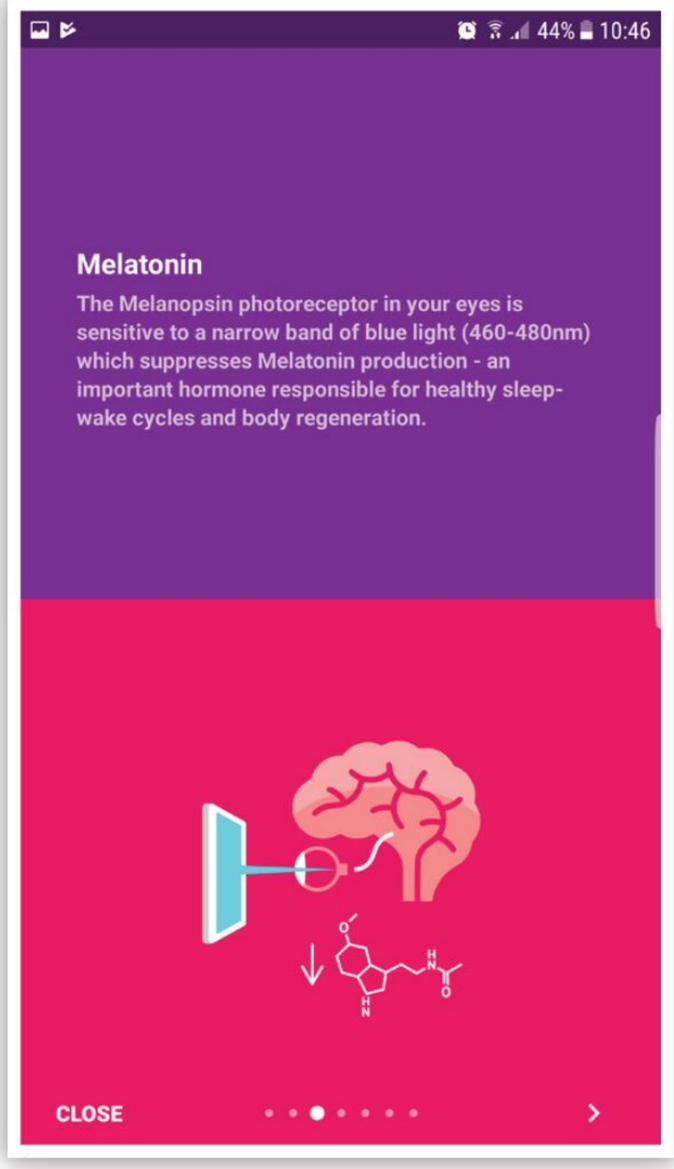
There are actually a few Android apps that will allow you to add a low blue light mode. For this guide we have chosen to use Twilight, as it offers more features than most.



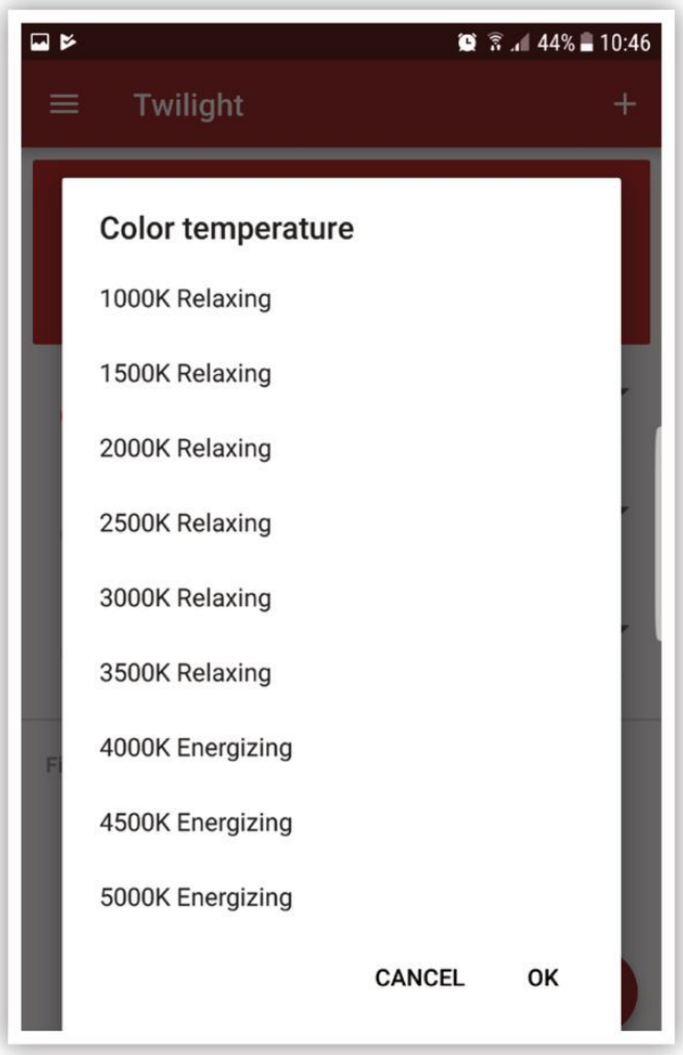
1 Search for, download and install the Twilight app from the Google Play store. The app is free, although some of the more advanced features will require an update to the Pro version. The app is compatible with almost all Android devices (phones and tablets) currently available.



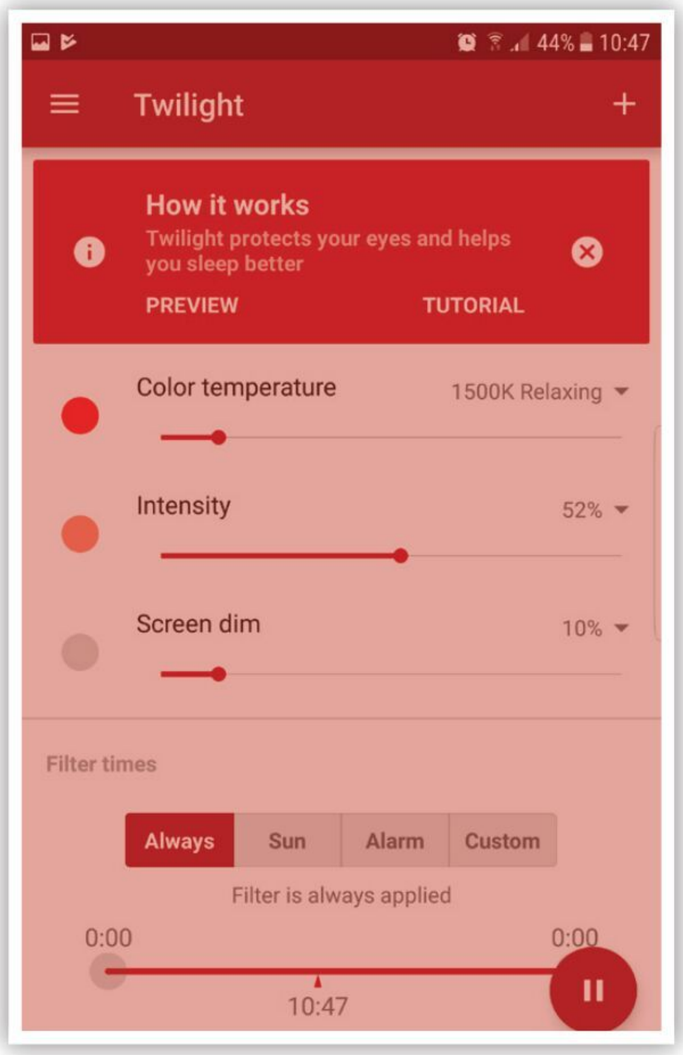
2 Twilight is designed to be a "set and forget" app. This means that you shouldn't really have to mess about with settings once the initial set up is complete. The first screen that appears after tapping the app icon contains every option you need to get set up correctly.



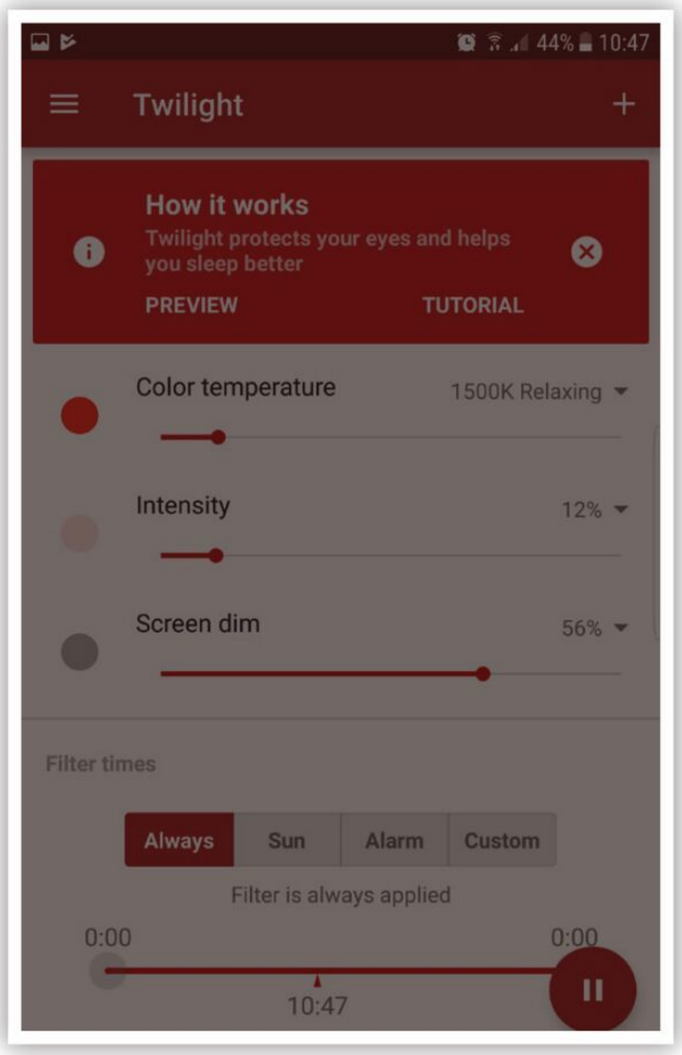
3 If you want to read more about the science behind Twilight and other night shift apps, tap the "How it works" option at the top of the screen. This explains the theory behind the app, as well as directing you to places where you can read more about blue light, circadian rhythms and more.



4 The next option is Colour Temperature, which is initially set at 1500k (relaxing). You can use the slider to alter the colour temp to suit your own preference. You can even set the colour temp to over 3500k, which is classed as Energising rather than Relaxing. Tap the Preview button to test.

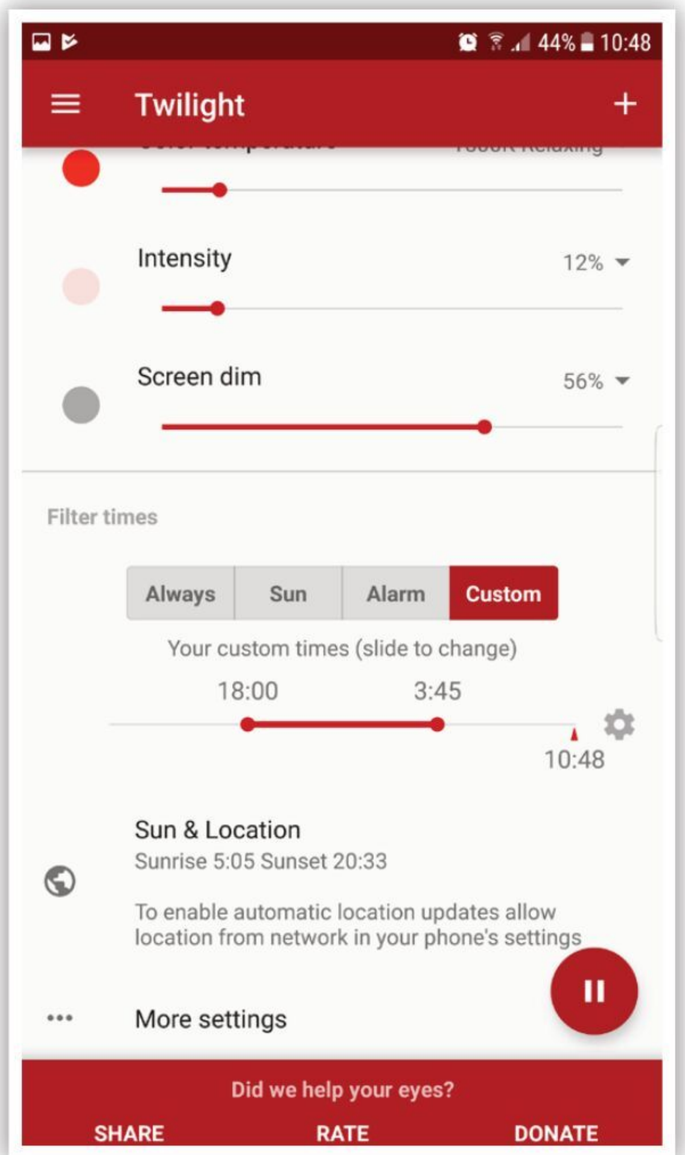


5 The Intensity slider controls how intense the selected colour is. 1% is basically turning it off, whilst 100% will normally be way too intense, making your screen very red. The default of 40% is a good place to start but we found that reducing that to about 30% can work just as well.



6 If you want to set the screen to dim whenever the night shift mode kicks in, use the next slider to control how much it dims by. Again, you can test your settings by tapping the Preview button. A slight dimming of the screen is thought to be good for the eyes, but the choice is yours.

7 It is now time to decide when you want the Twilight filter to automatically start and finish. The default is Sun, meaning that it will detect the sunset and sunrise times and turn on and off accordingly. You will need to enable Location Services for the app to use this option.



8 If you prefer not to allow automatic location detection, you can choose a custom time range. Tap the Custom button and use the slider to change the timeframe when the feature is activated. The feature is now set up, so just close the settings by pressing the Home button.

Chapter 5

Father James shoos June away on the street when she hops up alongside of us, trying to get the scoop on what's happened to Maze.

"Where is she Wills?" she asks.

I can't even get the words out. Part of me wants to kneel down and whisper to her, just like Maze did, and tell her we've got to get Maze out of there. Free her somehow. But I can't involve someone so little in such an awful thing as this. And finally, I just watch her go, her face torn by confusion and disappointment. Finally she looks away, downtrodden and scared,

The Science Bit

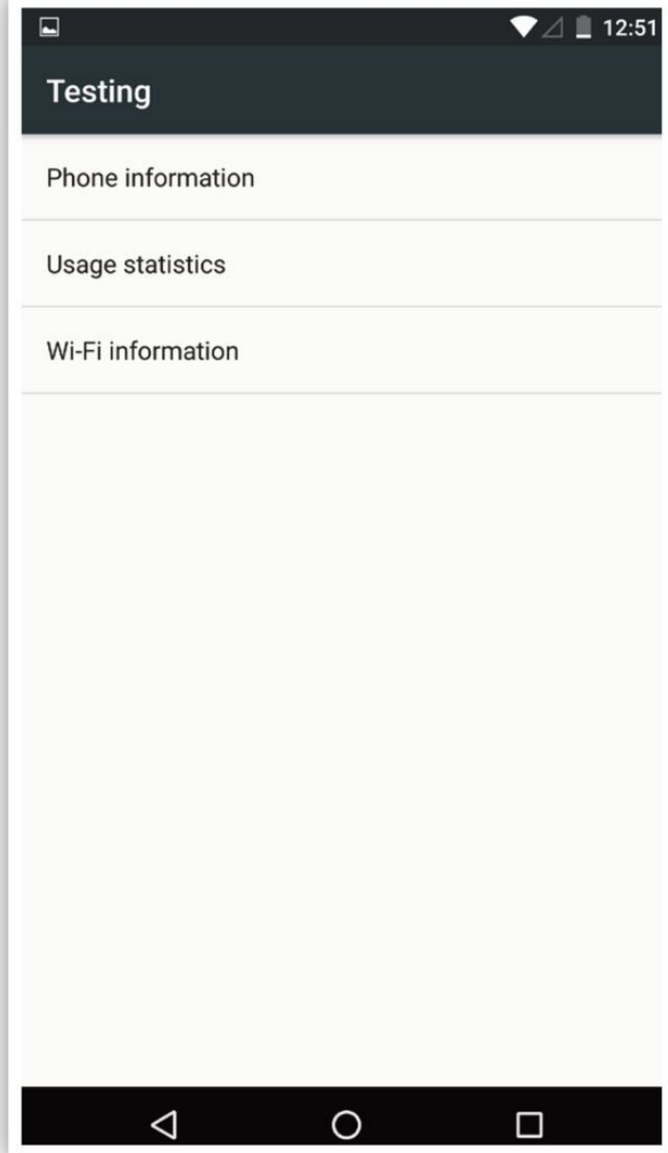
Lots of recent research has shown that exposure to blue light, the type of light our smartphone and tablet screens produce, can distort your natural circadian rhythm and subsequently, create an inability to fall asleep easily. Apps like Twilight work by filtering out the blue light our screens produce.

Hidden Android Test Menus

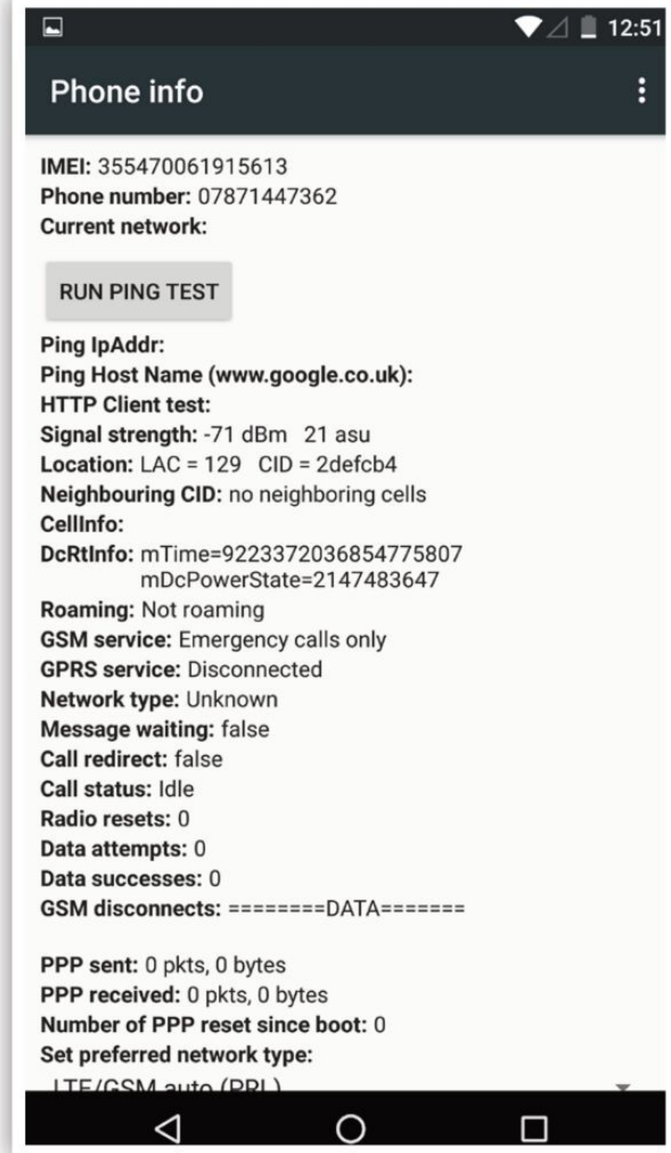
Hidden within every Android device is a collection of different test menus, that allows users to check allsorts, including how well the touchscreen is responding and whether the notification LEDs are working. You don't need any special apps or additional software to access these test menus, you just need to know which code to enter into the dialler screen. Let's take a look at some of the most useful test menus and what they allow you to do.

Testing Menu Code

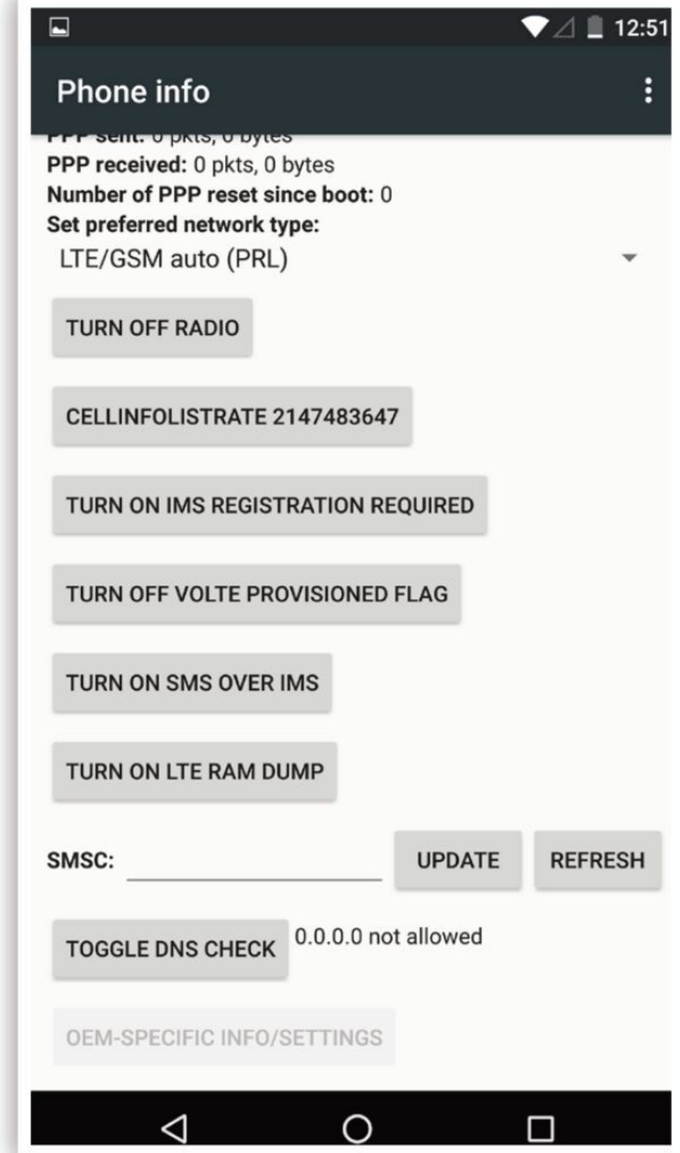
Whichever carrier or manufacturer is involved, these test codes should work for the majority of Android devices. If they do not, try searching online for specific codes for your particular device.



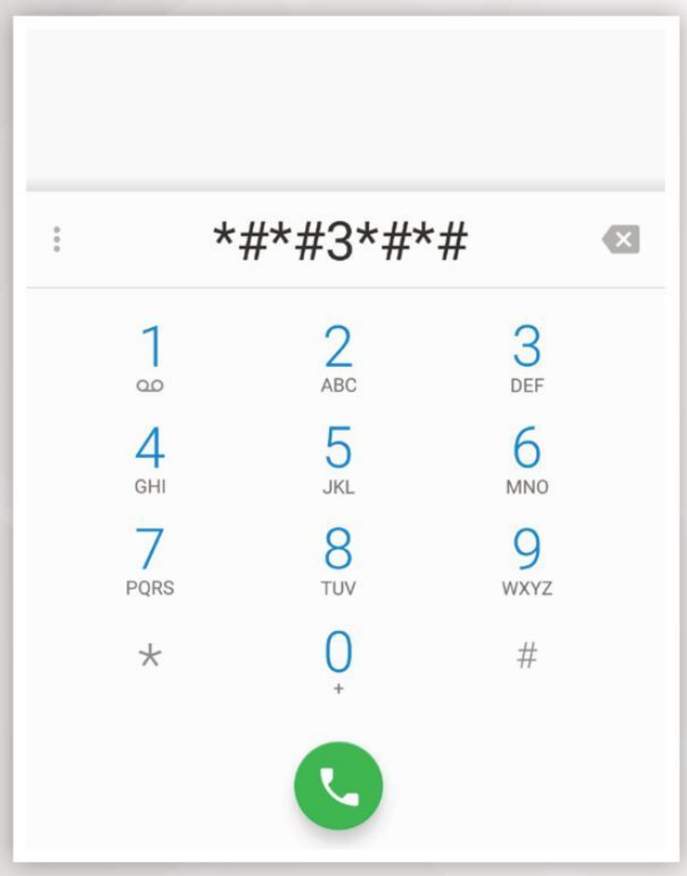
1 Open the phone dialler screen on your phone and type ***#*#4636#*#***. As soon as you type the last *, the test menu will appear on screen. This contains four main sections: Phone Information, Battery Information, Usage Statistics and Wi-Fi Information. Tap any heading to see more info.



2 You can gain access to a lot of general information about your phone by going into the Phone information menu. You will also be able to run a PING test that checks the speed of connection to your current phone mast. Be careful when running tests or changing configurations.



3 If your device has a removable battery, you can find lots of detailed information about the battery in the Battery Info screen. As well as showing the charge percentage remaining, it will reveal if the battery health is good, letting you decide whether buying a replacement is worth considering.



Useful Android Test Codes

Here are some more Android test menu codes to try out. These may not work for every device, but should work for most Android phones.

Camera Information - *#*#34971539#*#* -

To see detailed information about the camera hardware and software in your phone.

Service Test Mode - *#*#197328640#*#*

This Android secret menu lets you access service mode where you can run various tests.

LCD Test Code - *#*#0*#*#*

This lets you test the LCD display on your device, to see if there are any display errors.

RAM Details Menu - *#*#3264#*#*

This Android secret code can be used to find out your phone's RAM version.

Touch Screen Test - *#*#2664#*#*

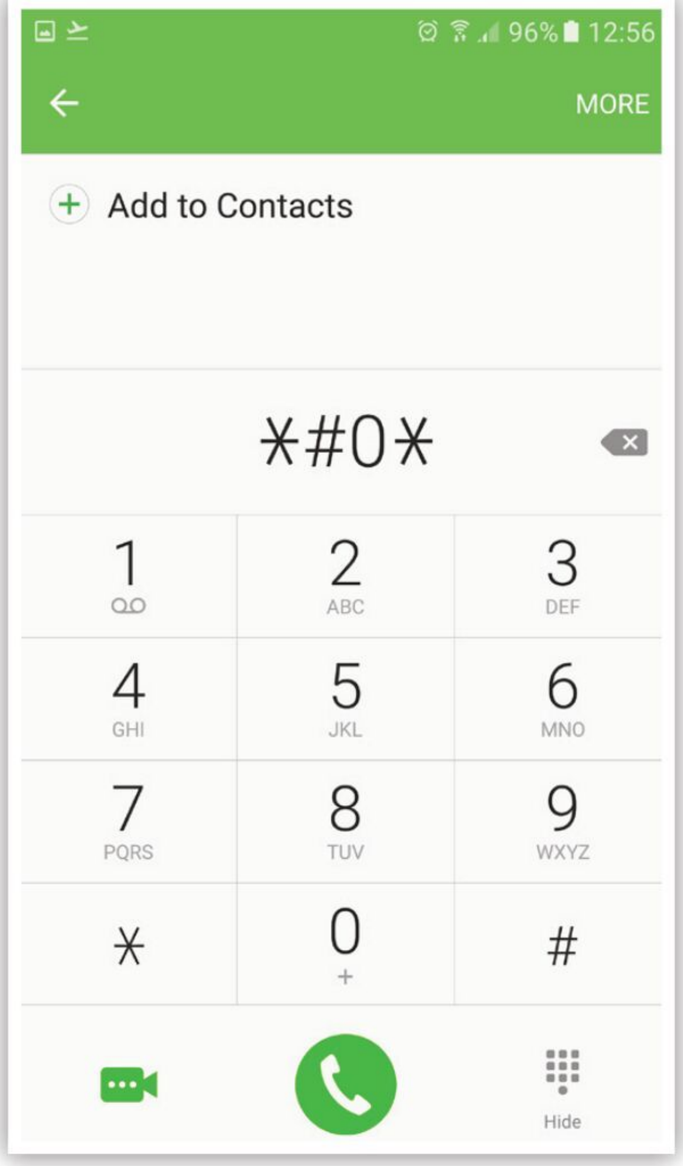
If you want to test your phone's touch screen, then use the code shown here.

Phone IMEI Number - *#06#

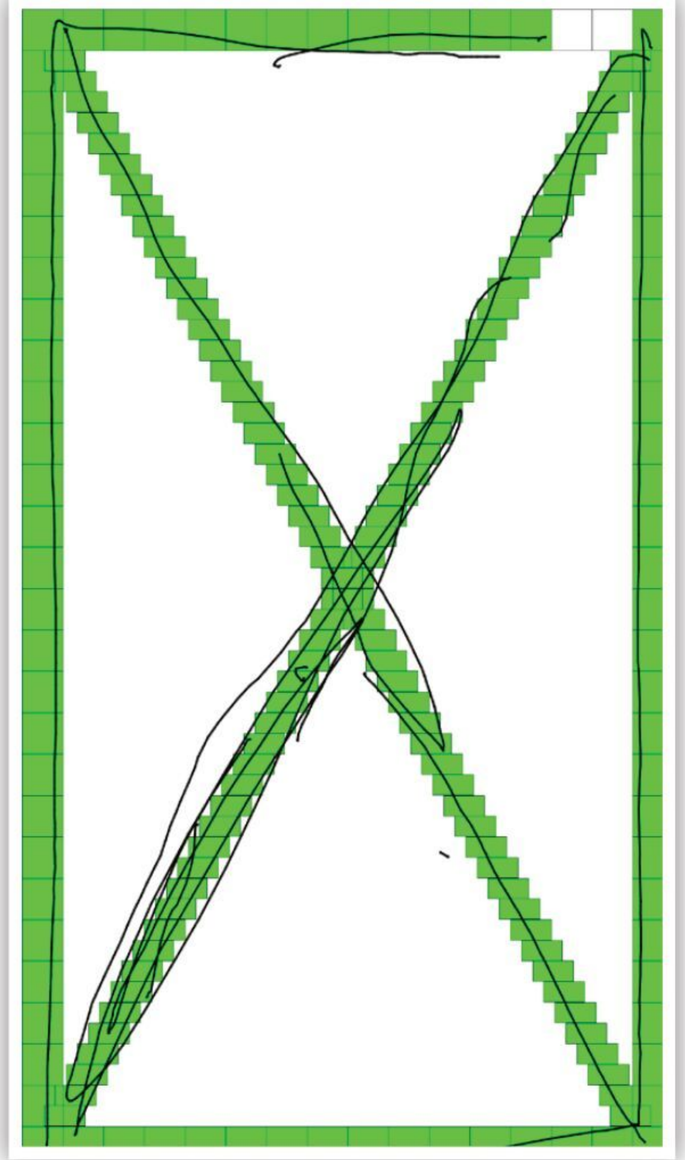
One of the most popular and useful hidden menu codes for Android, showing you the IMEI number of your device.

Samsung Service Test Mode

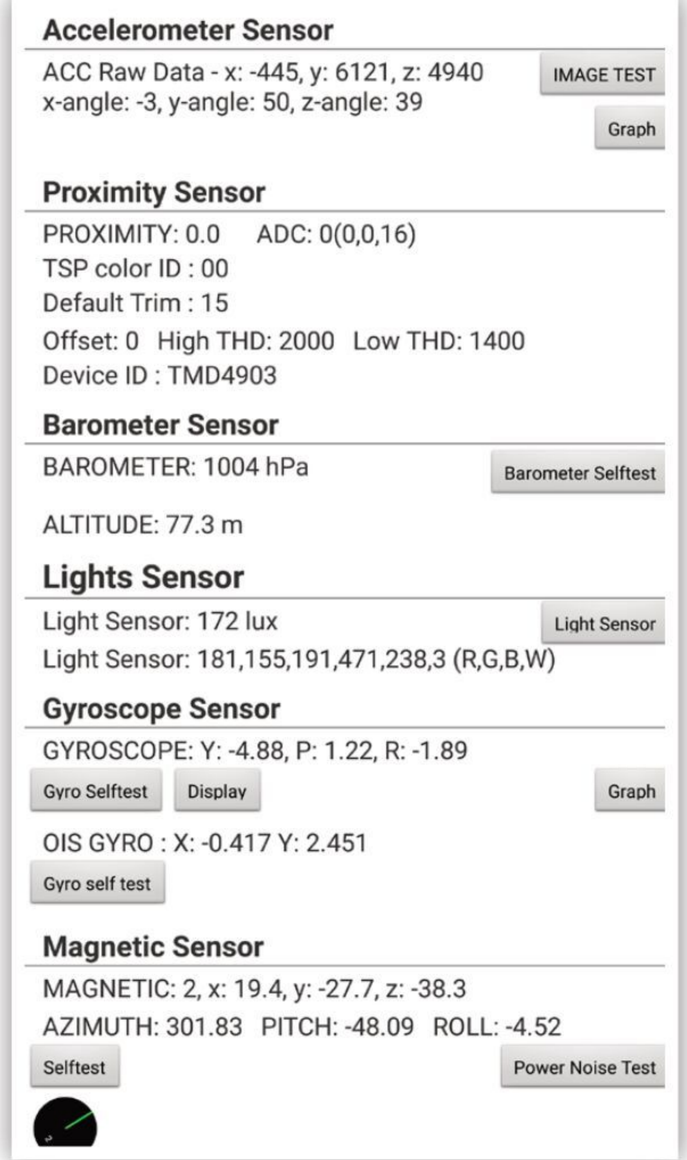
If you are using a Samsung device, such as the S6, you can access a unique menu that gives you access to all sorts of tests.



1 As with the previous codes, you will need to enter this one into the dialler screen on your Samsung phone. Enter the code *#0*#. As soon as you enter the code, the test menu will appear. This code may not work on very old Samsung Galaxy phones but it should on most.



2 The screen should now be filled with buttons giving access to the tests shown on each. Within each test there may be additional options or requirements. The Touch screen test, for example, requires you to use your finger to highlight all of the elements on the screen before it will complete.



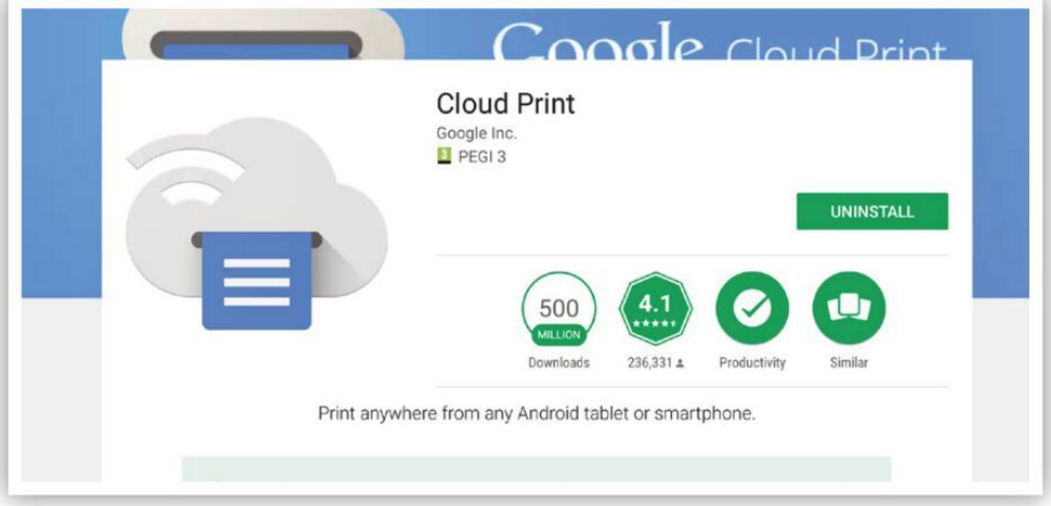
3 You can leave any of the tests, either when they are complete, or by tapping the Back button on your phone. Once you have completed all of the tests you want to perform, you can leave the test menu by tapping the Back button on your phone twice in quick succession.

Save Web Pages Offline

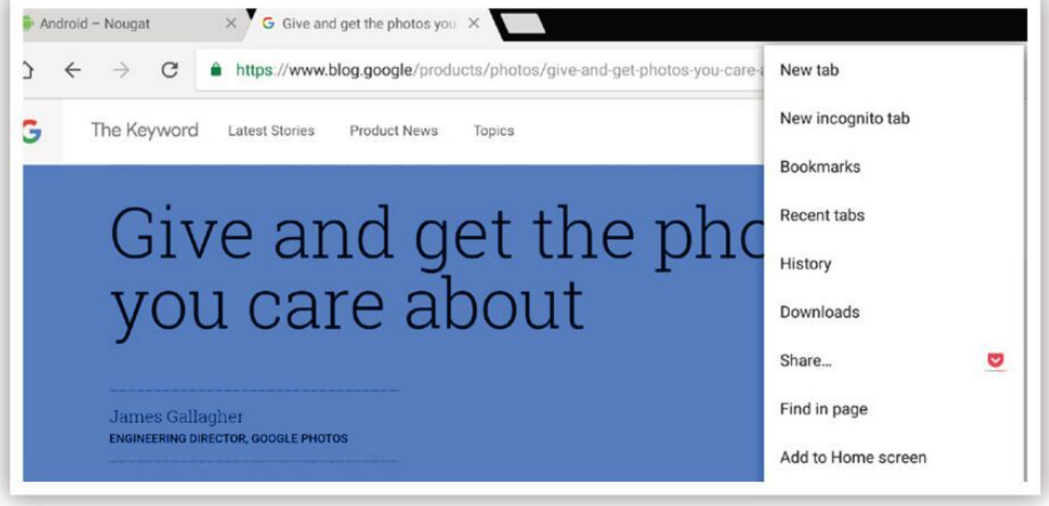
Your smartphone browser makes it easy to bookmark web pages which you might want to read or refer to at a later date. But what about those occasions when you know you will need to read something online, but also know that you won't have access to a Wi-Fi or Mobile Data connection? Sure, you could spend a load of time cutting and pasting copy from a page to a text document, but why bother when there is a much more elegant solution?

Save Web Pages as PDF

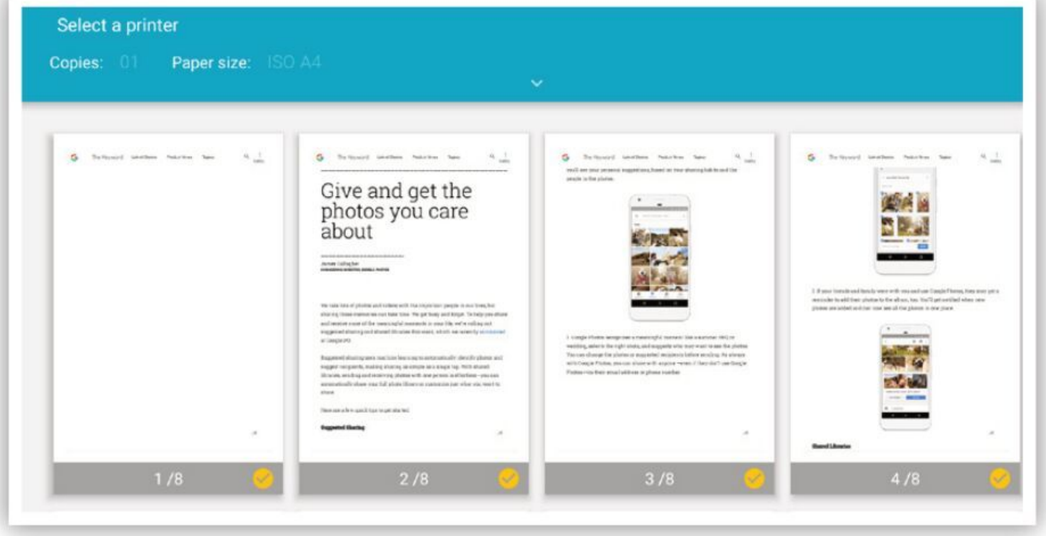
There are a few different options available to you when you want to save a web page for offline reading. The first we will look at is saving as a PDF file.



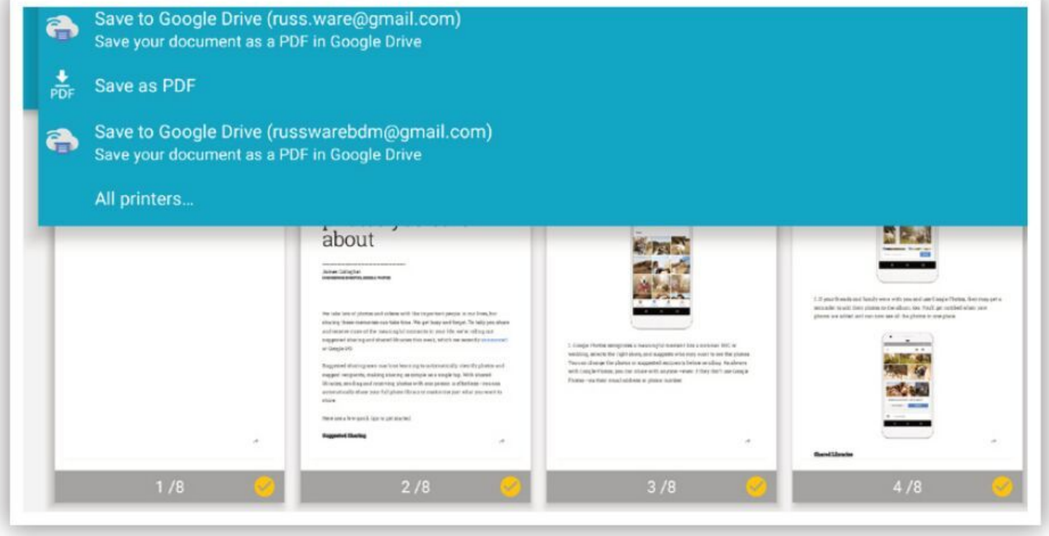
1 This first technique should require no additional apps to be installed, instead taking advantage of the built-in support for PDF's which is part of the printing options on Android. However, if you are using an older device, with an older version of Android, you may need to install the Cloud Print app.



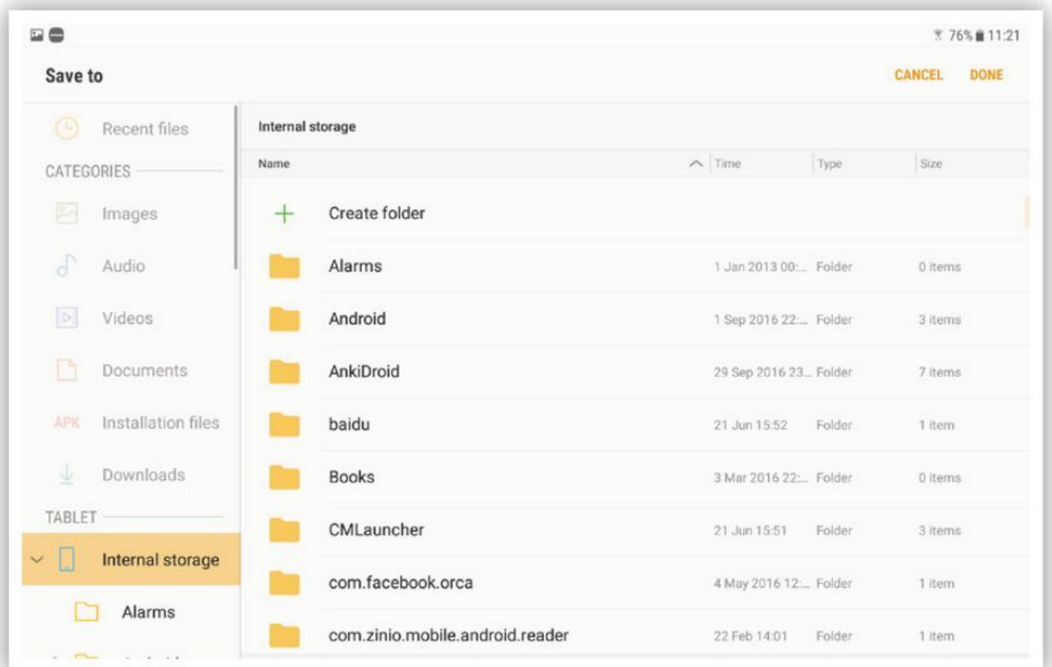
2 Open the web page you want to save to read offline later. In this example, we are using the Chrome browser, but the same features are available in almost all third-party browsers as well. In Chrome, tap the Menu button in the top-right corner, and from the menu, tap the Print option.



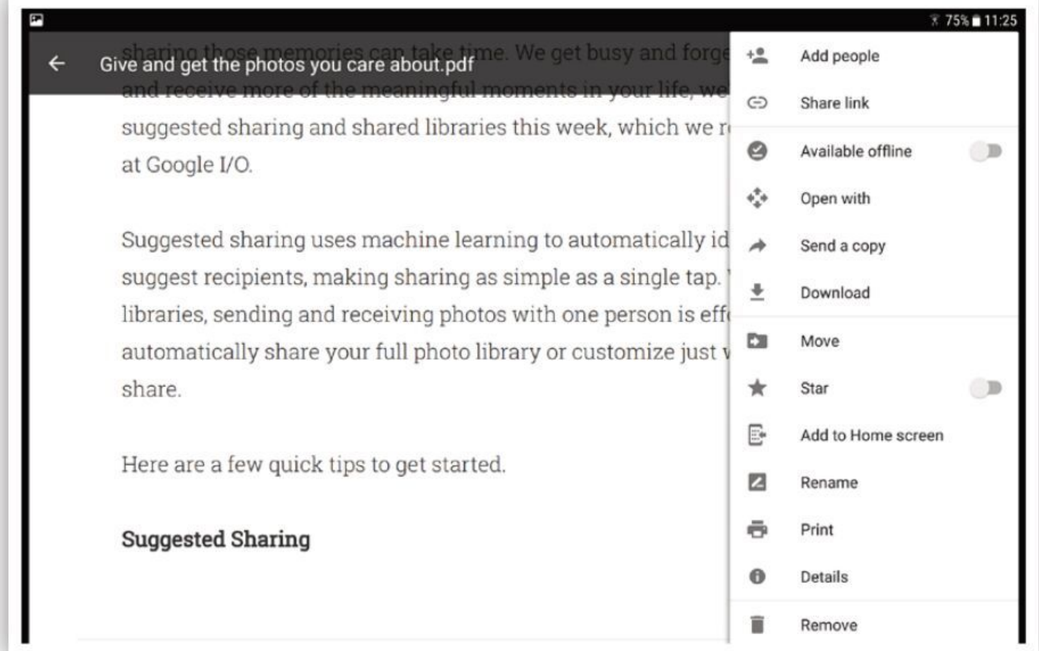
3 The Print Preview screen will appear, showing you what would be printed (should you choose to do that). In most cases, you can use the check mark buttons on each of the displayed preview pages to select and deselect those you don't want. With the content you want selected, tap the printer name.



4 This will display any printers available to send the page to for printing. It will also include the option to "Save as PDF". Tap this option and the "Print" button will change to a "PDF" button. Tap this and a "Save to" menu will open. You can then choose to save to Google Drive or Downloads.



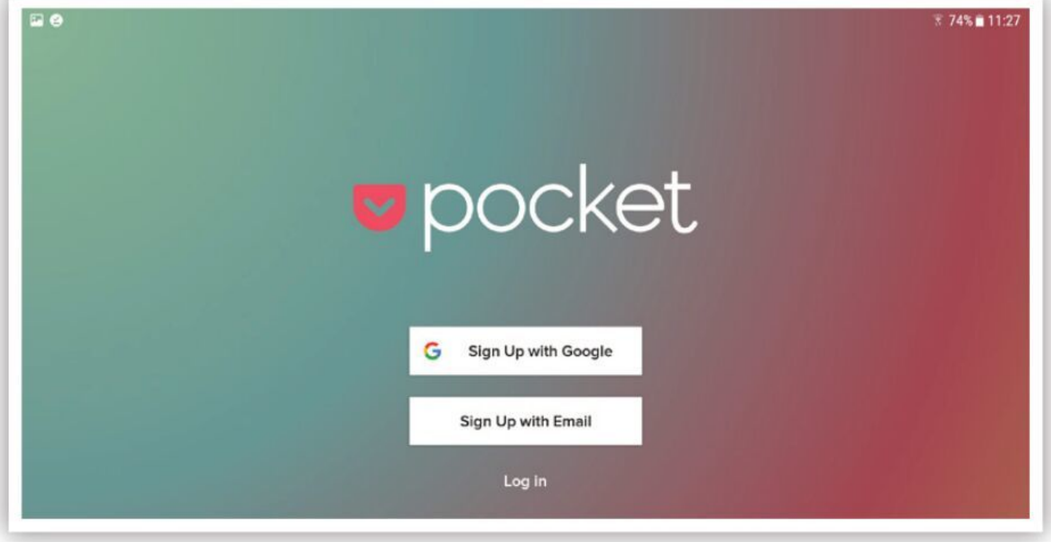
5 Saving to Google Drive is a good idea, as this means the file will be available on any devices which are linked to your Drive. After a few seconds, the file is saved. The final thing you need to do is open Google Drive, tap the ! button on the file and use the slider to make it “Available Offline”.



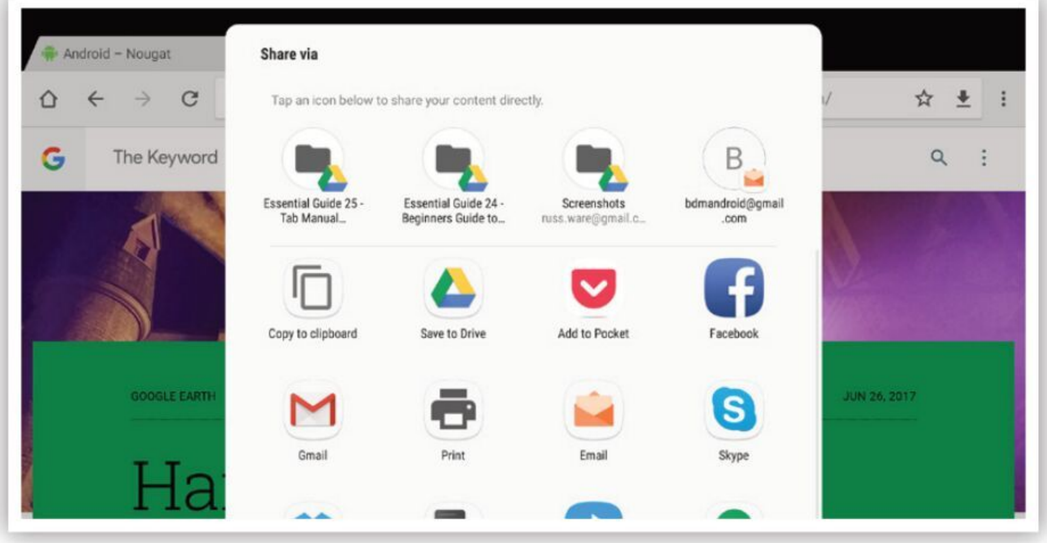
6 You can, of course, choose to save to Downloads. This saves the PDF onto your device straight away (but only the device you download it on). The great thing about saving web pages like this is that everything is kept intact in the document, from text links to images and diagrams.

Save Web Pages to Pocket

Pocket allows you to Save directly from your browser or from apps like Twitter, Flipboard, Pulse and Zite. You can download Pocket from the Play Store.



1 The first thing you will need to do is set up a Pocket account. Open the app and tap the Sign Up button. Choose a username and password, and enter an email address. If you prefer, you can set up your Pocket account on your computer. Head over to getpocket.com and look for “Sign Up”.



2 To save a webpage to Pocket, open your browser and navigate to the page. Tap the Menu button and select Share > Save to Pocket. Open Pocket and view your list. Here you will see any saved pages, including a thumbnail image if the page had any (the main image will be shown).

3 Tap any item in the list to view it. You can change the display style, including screen brightness and font size, using the buttons at the top of the page. Once you have finished reading the article, you can archive it by tapping the Tick button. Alternatively, tap the Menu button and delete the article.

4 Pocket will save pages in a stripped down form, which usually means that images won’t display when reading offline in the app. If you prefer, and if you have a Internet connection, you can tap the menu button in Pocket and select “Switch to Web View” to see the original full version.

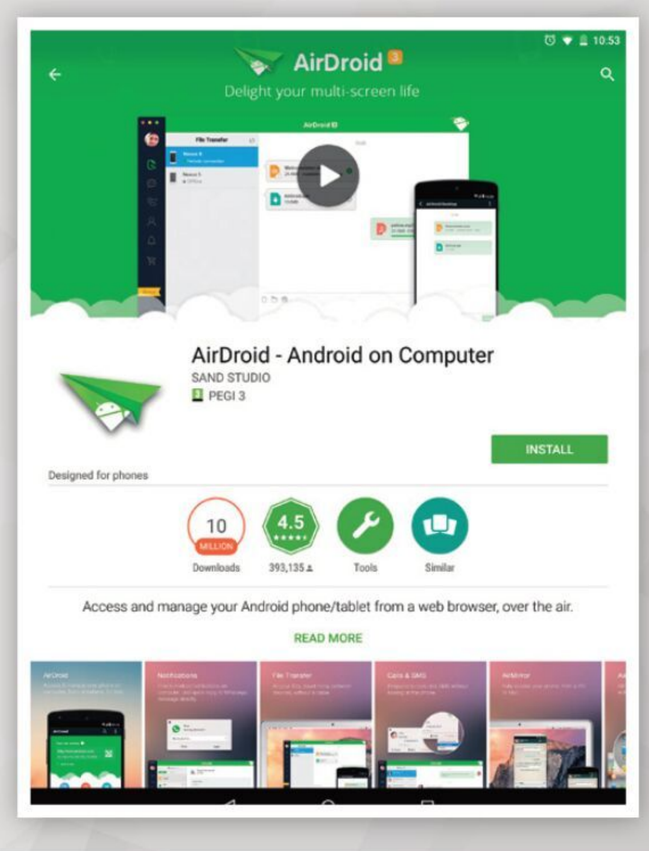
SMS Messages on a Wi-Fi Tablet

Not all Android tablets are created equal and if you have a tablet with no SIM card slot, you are slightly limited in your communication options if you don't want to use VOIP services or Online chat; or rather, you were slightly limited before now. Thanks to apps such as Mightytext, you can set up your non-3G/4G tablet to receive SMS messages from your Android phone, using the same number.

Mightytext Alternative

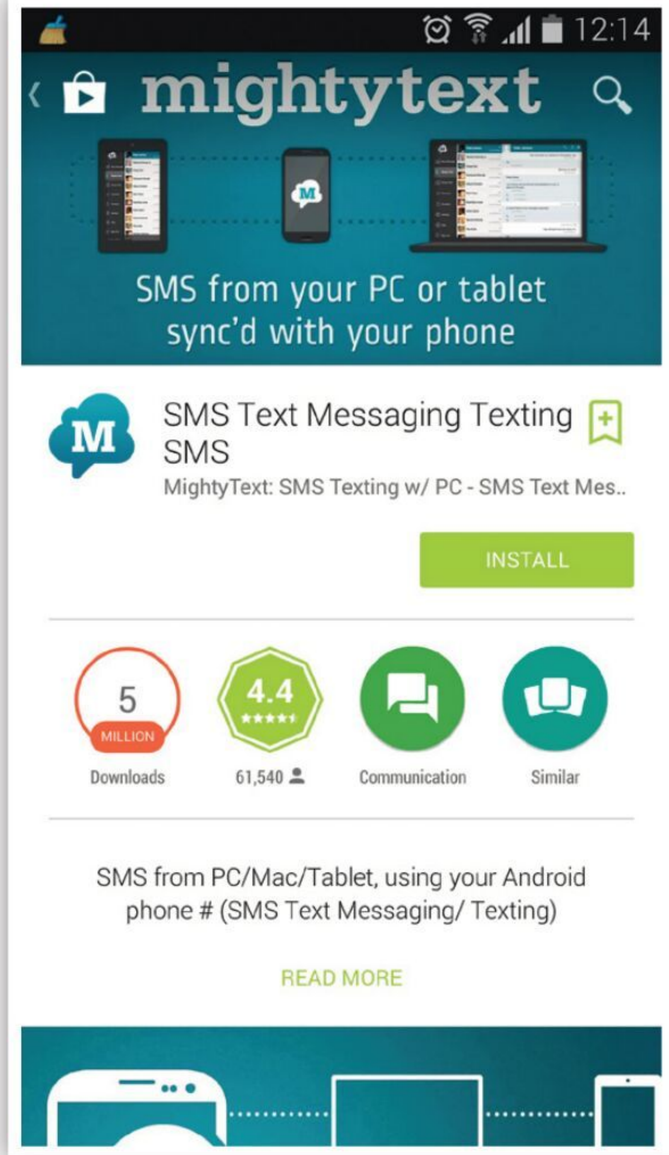
If instead of wanting to receive messages on your tablet, you want to receive them on your PC or Mac, the best option is the superb AirDroid. AirDroid allows you to access and manage your Android phone or tablet from Windows, Mac or the web, wirelessly, for free.

AirDroid lets you focus on your PC, type with a full physical keyboard and control with a mouse, and transfer things faster without looking for a cable. AirDroid also makes it easy to transfer files between your phone and computer.

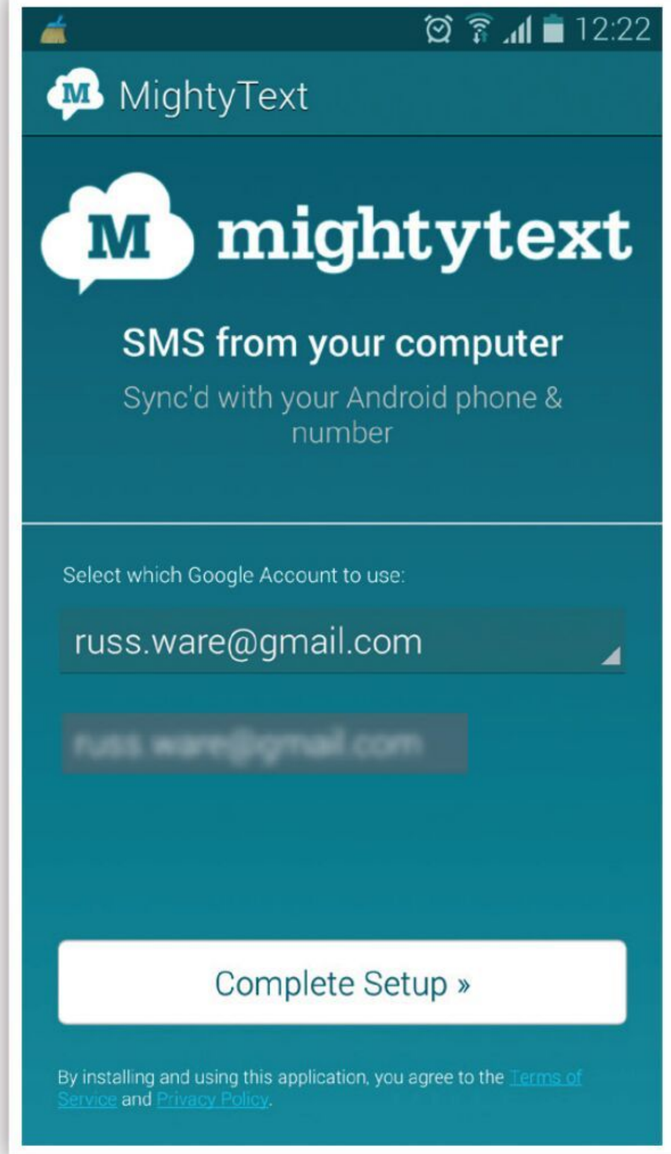


Running Mightytext

Mightytext will only work if you have a compatible smartphone to run the parent app. This is the software which sends the SMS messages to your tablet.

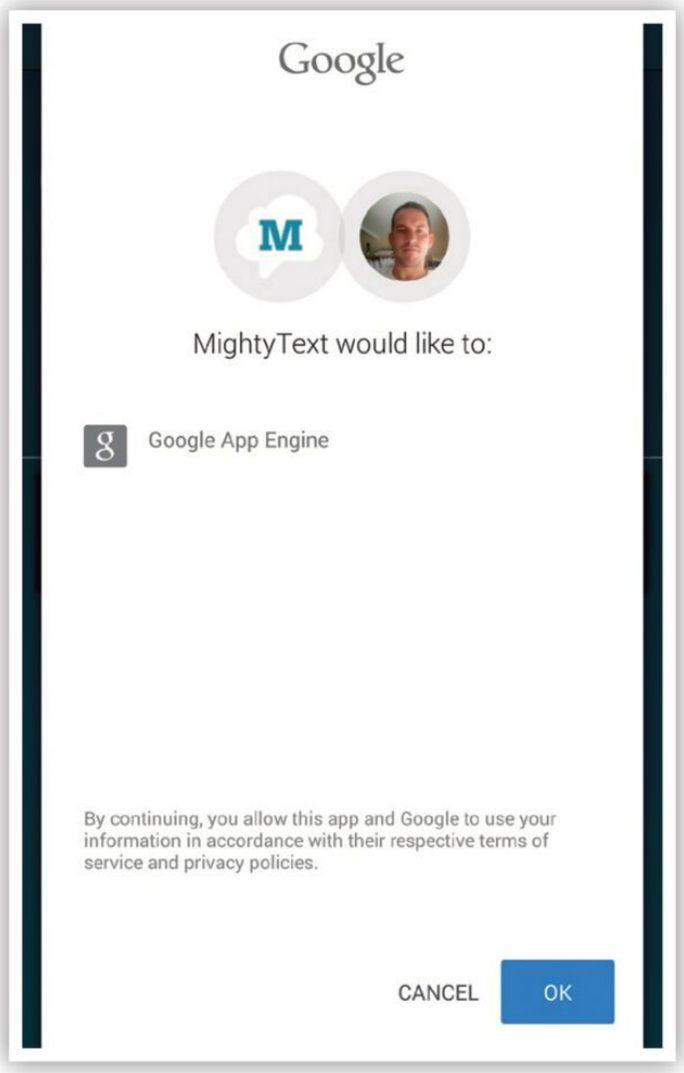


1 Before you start setting up Mightytext on your tablet, you will need to install and set it up on the Android phone you will be using. Search for the app on your phone, and the phone version should automatically be displayed.

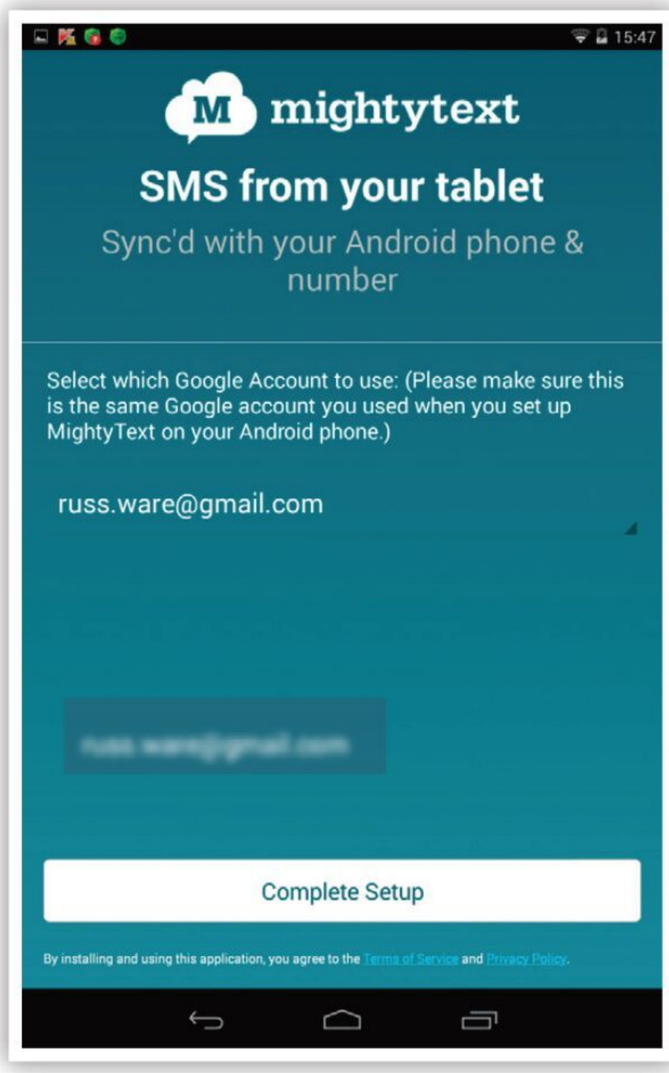


2 Once it's installed on your Android device, open Mightytext and select the Google account you want to use from the drop-down menu. You will need to use the same account on both the phone and the tablet for the service to work.

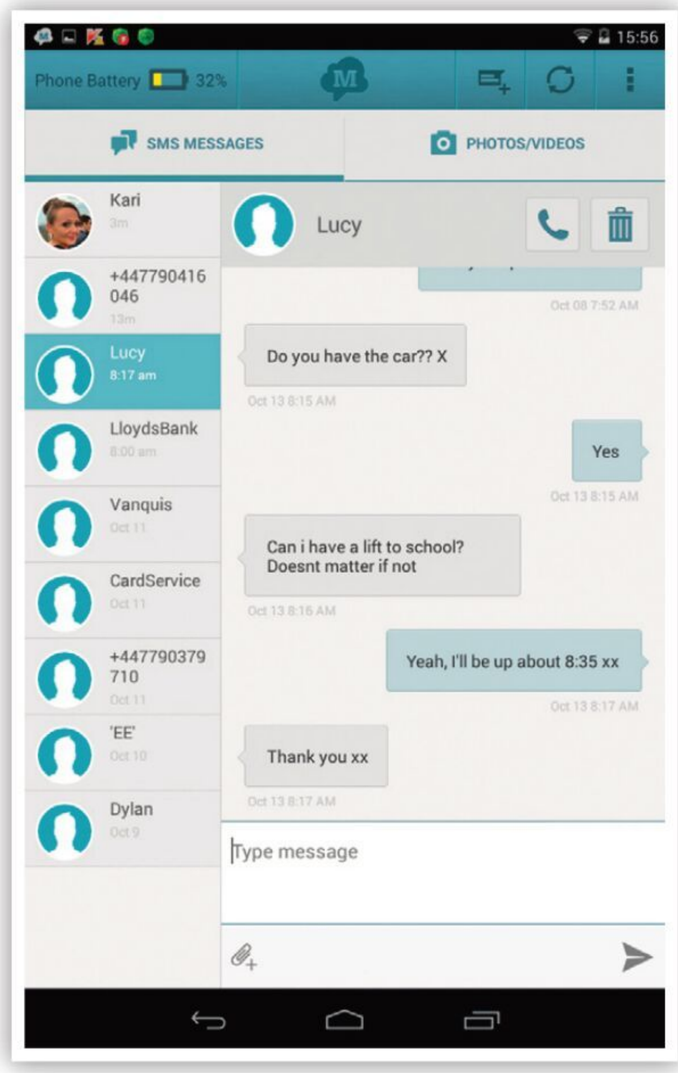
SMS Messages on a Wi-Fi Tablet



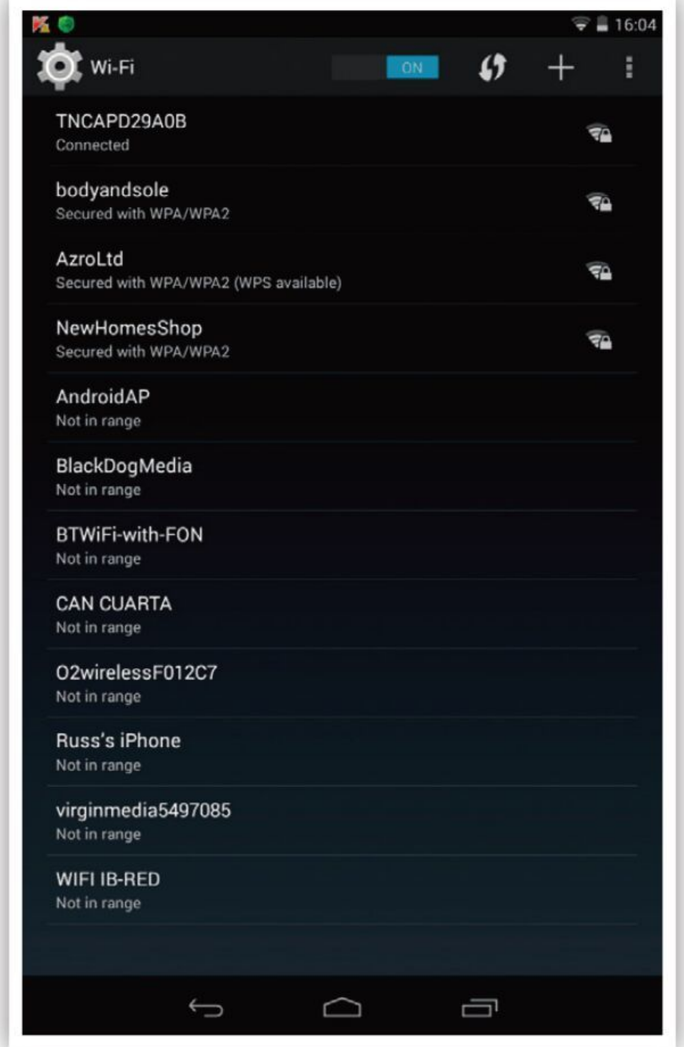
3 Tap Complete Setup and then allow access to the Google App Engine when this is requested. If the setup is successful, "Connected" will be shown on the next screen. If you want to text from your computer, visit https://mightytext.net/app.



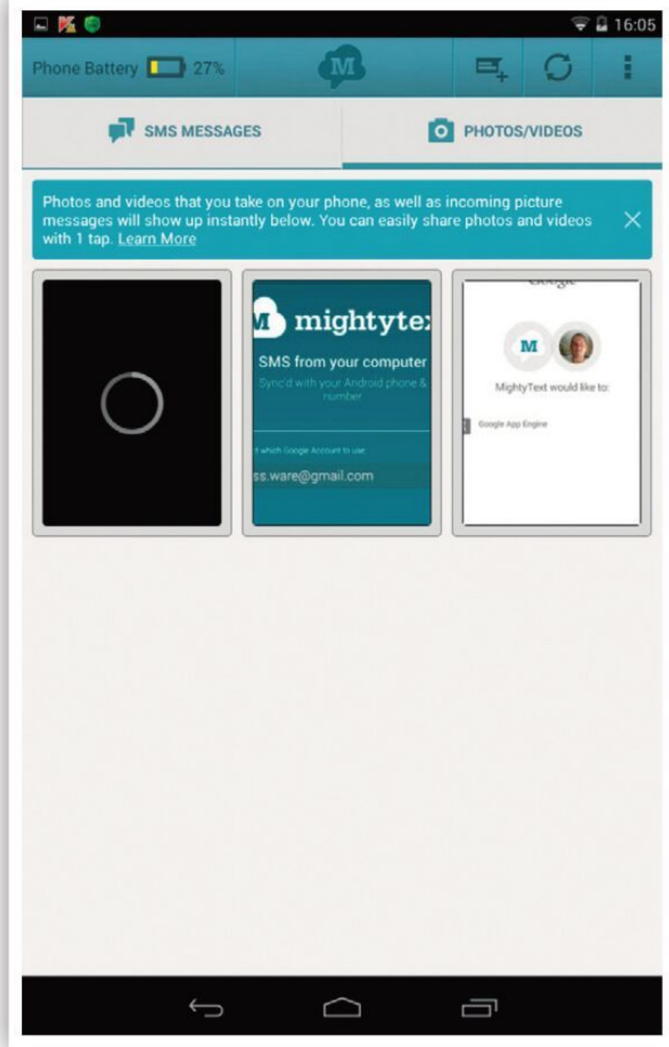
4 Now install the app on the tablet you want to receive the SMS messages on. Make sure that the same Google account is selected on the tablet setup screen, then complete the setup. If you see an error message, run the setup again.



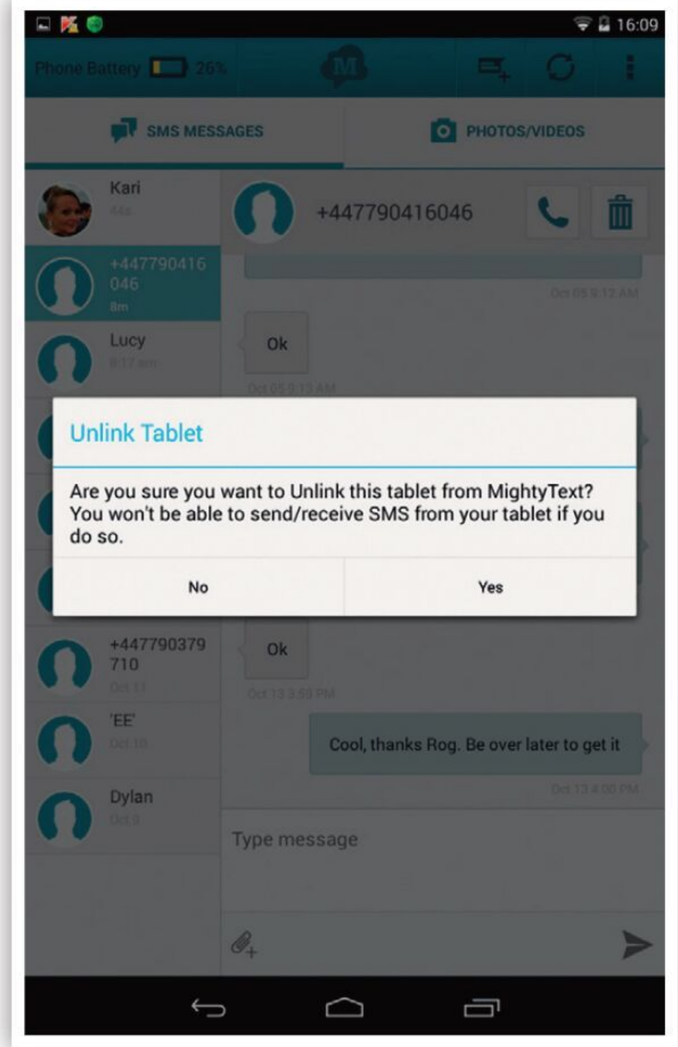
5 Launch the Mightytext tablet app. If the connection is working, you will see your SMS messages and conversations from your phone on your tablet. The conversation list won't show all messages, just the newer ones.



6 When you reply to a message via the tablet interface, a small confirmation message will appear below it on screen. This lets you know that the message was sent via the connected phone. Lose your Wi-Fi connection and messages won't send.



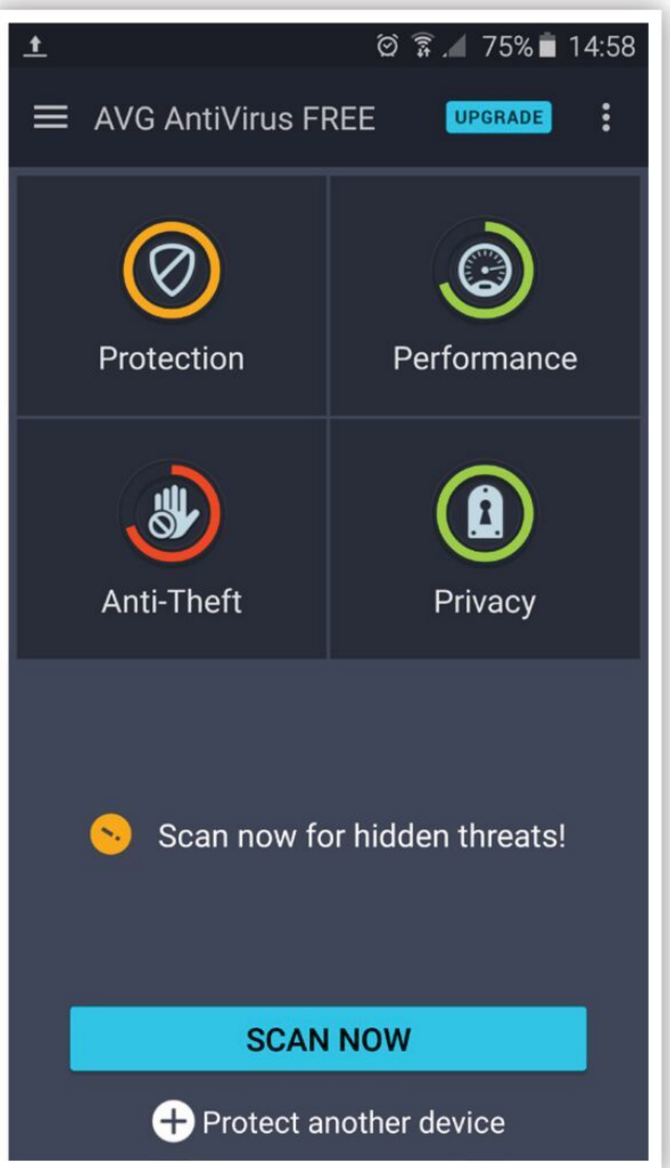
7 You can also use Mightytext to sync photos and videos between your phone and tablet. When connected as mentioned, tap the Photos tab and then tap the Try it Now button. This will sync the seven latest photos taken on your phone.



8 You can temporarily stop receiving messages on your tablet simply by disconnecting the Wi-Fi on either device. If you want to unlink the two devices completely, tap the Menu button and select the Unlink Tablet option.

Dealing with Viruses on Android

In some ways, when it comes to viruses, malware and other tech nasties, Android is a victim of both its own success and of its open nature. If you read any of the tech news, or even mainstream news sometimes, it can seem like virus threats on Android are increasing by the week. Exactly how much of a problem is this then and what is Google doing to make sure your device isn't affected? Read on to learn more about viruses on Android.

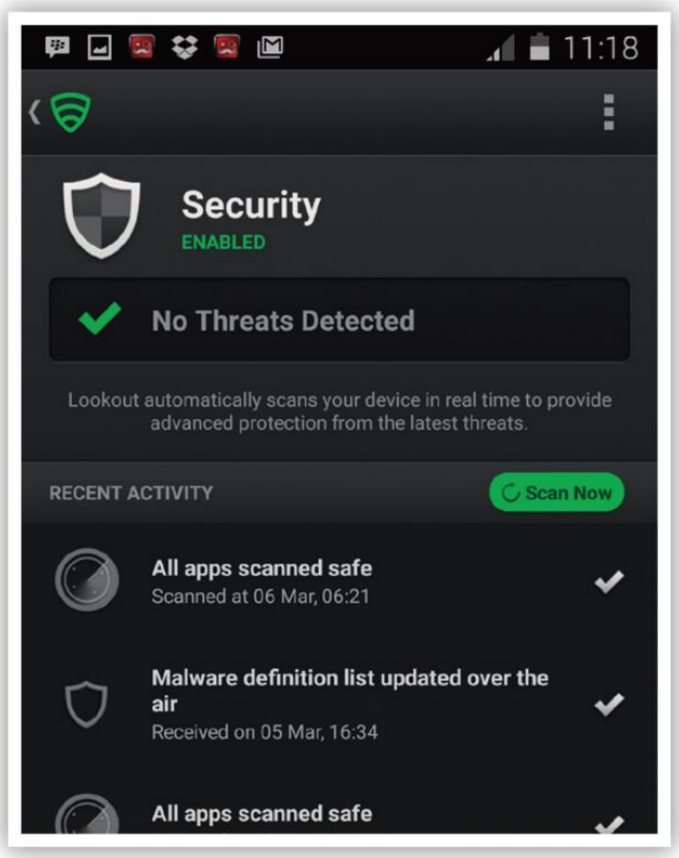


Antivirus Software

Just like on your computer there are lots of different Anti-virus tools available on Android; and just like on a PC, they all do broadly similar things and offer similar features. You will also have a choice of using a free app, or paying for a premium app. One of the best free apps is AVG AntiVirus FREE. With AVG AntiVirus FREE for Android phones and tablets you'll receive effective, easy-to-use virus and malware protection, as well as a real-time app scanner, phone locator, task killer, app lock and local device wipe.

Understanding Virus Threats

You really don't need to panic over the threat of viruses on your device, but it makes sense to know more about them.

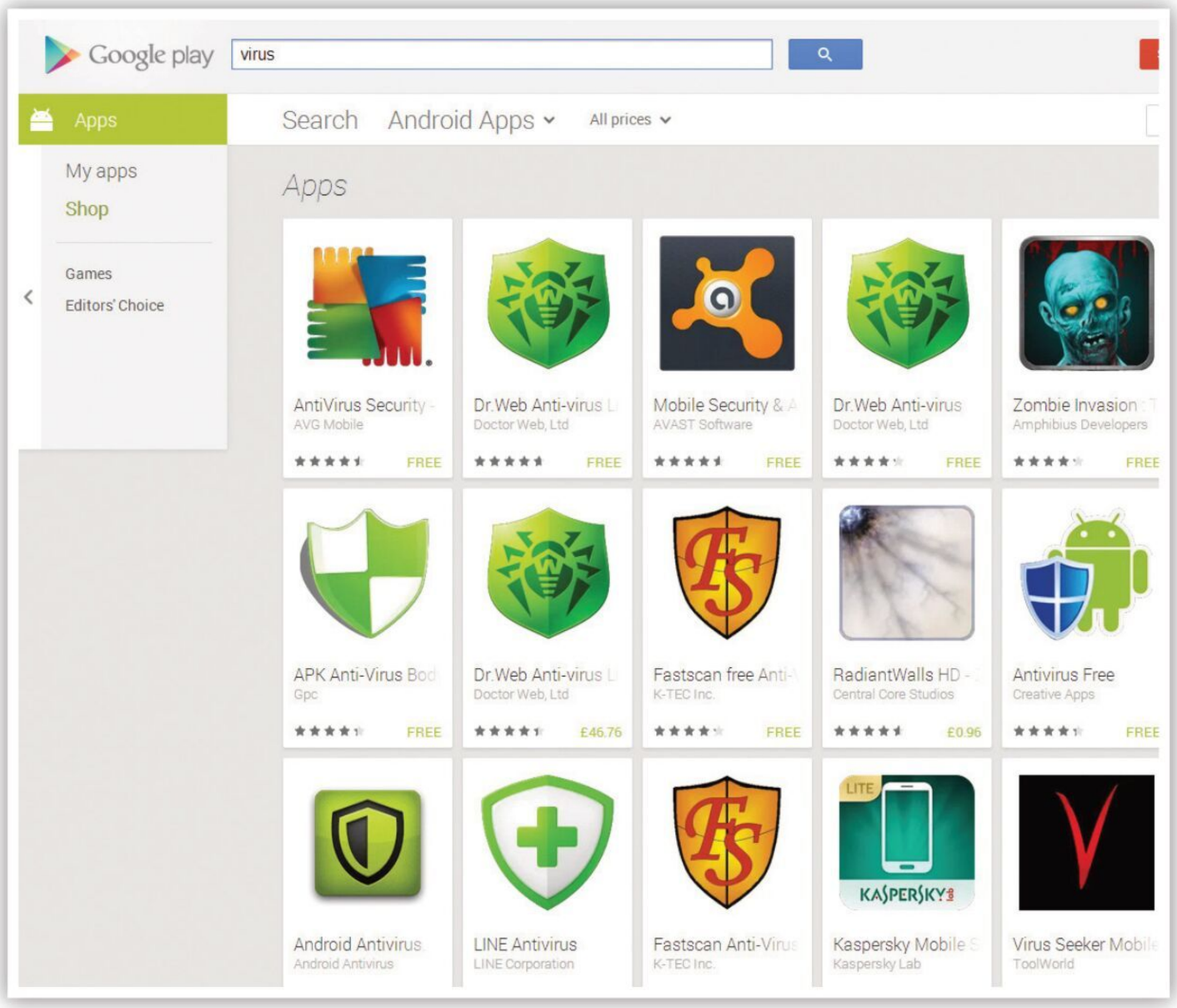


Android Viruses

There are thankfully still few known viruses which affect the Android operating system. One of the most well-known is Trojan-SMS.AndroidOS.FakePlayer.a. This was the first Trojan-SMS virus identified on Android, and was thought to have infected hundreds of thousands of devices. The virus was capable of sending SMS messages to premium rate numbers without the user having any indication that something was wrong. Other well-known viruses include Gingermaster, which was capable of stealing user information from the infected device (user ID, SIM, IMEI, etc.) and DroidKungFu, which allowed back door access to the device and files to be removed.

Android Malware

The distinction between viruses and malware on Android is something of a grey area. Viruses get called malware and malware get called viruses. It is safe to say, however, that you really don't want either to infect your device. One of the best known malware attacks was DroidDream (also known as Android.Rootcager) which affected around 60 apps on the Android Market (Google Play store) in 2011. The malware added infected devices to a botnet, installed additional software and stole data. It is thought that hundreds of thousands of devices were infected, even though Google was quick to release a fix for the problem.



What is Google Doing?

Although it hasn't always been super quick to remove infected or suspicious apps from the Play Store, Google is now taking the threat of malicious software seriously. It is getting quicker at removing dodgy apps, and in 2012 the company introduced Bouncer. Bouncer provides automated scanning of the Android Market for potentially malicious software without disrupting the user experience of the Android Market or requiring developers to go through an application approval process. Android also features several things that reduce the threat of malware and viruses.

Sandboxing

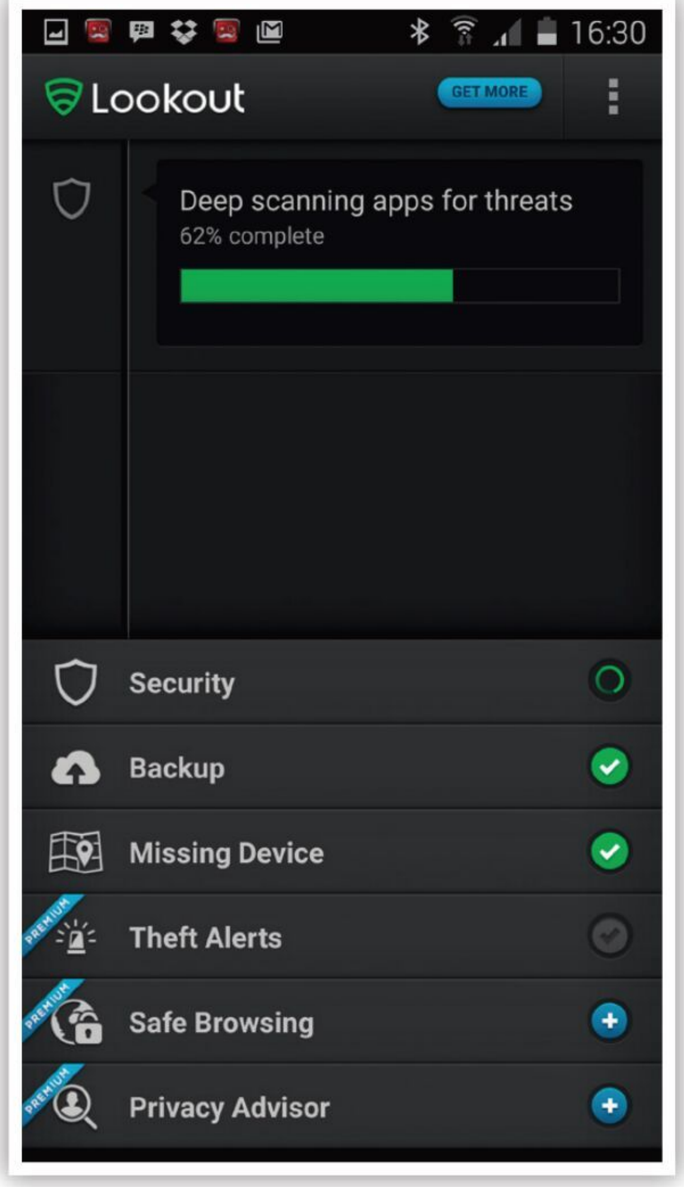
The Android platform uses a technique called "sandboxing" to put virtual walls between applications and other software on the device. So, if you download a malicious application, it can't access data on other parts of your phone and its potential harm is drastically limited.

Permissions

Android provides a permission system to help you understand the capabilities of the apps you install, and manage your own preferences. That way, if you see a game unnecessarily requests permission to send SMS, for example, you don't want to install it.

Malware removal

Android is designed to prevent malware from modifying the platform or hiding from you, so it can be easily removed if your device is affected. Android Market also has the capability of remotely removing malware from your phone or tablet, if required.



Virus and Malware Safety Tips

No operating system is completely safe, but it can be made safer by following a few simple steps. These tips will help to reduce the possibility of your Android device being infected.

1. Install a reputable anti-virus app on your device. Although the way Android is built means that anti-virus apps cannot be perfect, having one installed will at least catch some infections.

2. Avoid installing apps from third-party app stores if at all possible. Sideloading (installing apps using the .apk files found on unofficial websites) can be a source of virus infection.

3. Google, via the Play Store, can remotely remove infected applications from your phone. If you receive a notification to tell you a suspect app has been removed, make sure that you double-check.

4. It is highly advisable to keep installation of apps from Unknown Sources set to Off in the device's settings. This will help ensure that nothing enters the system except through official channels.

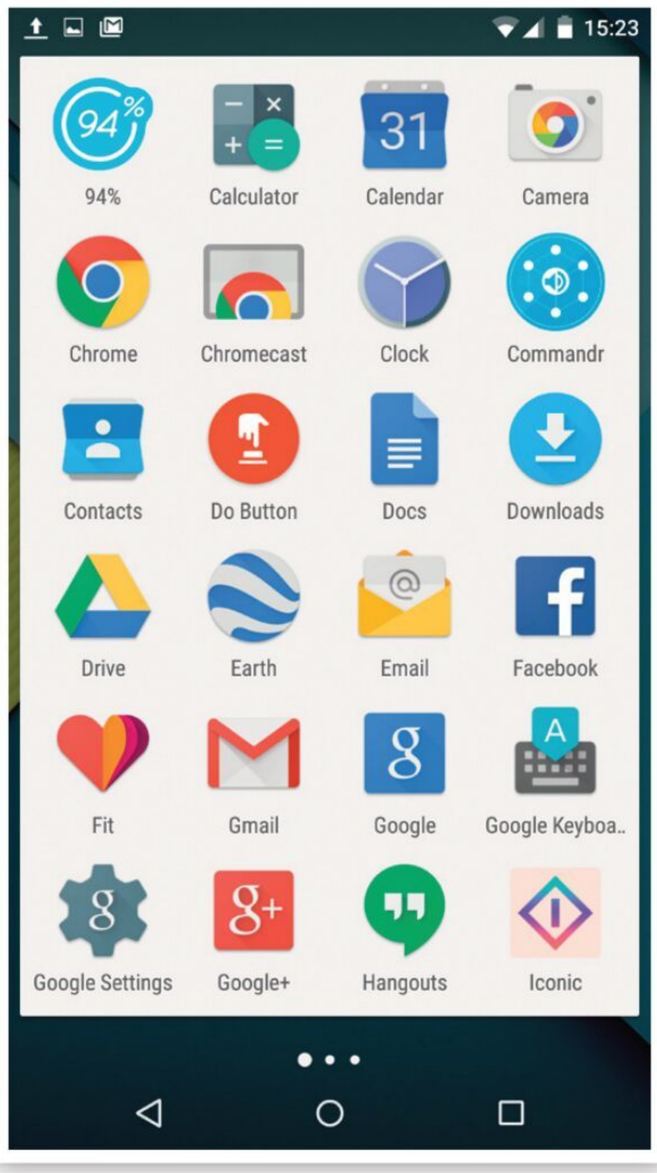
5. Check permissions carefully. When you install any app from the Play Store, you are shown which permissions the app requires to work. If you don't like the sound of any of the permissions, avoid the app.

Disable Android Bloatware

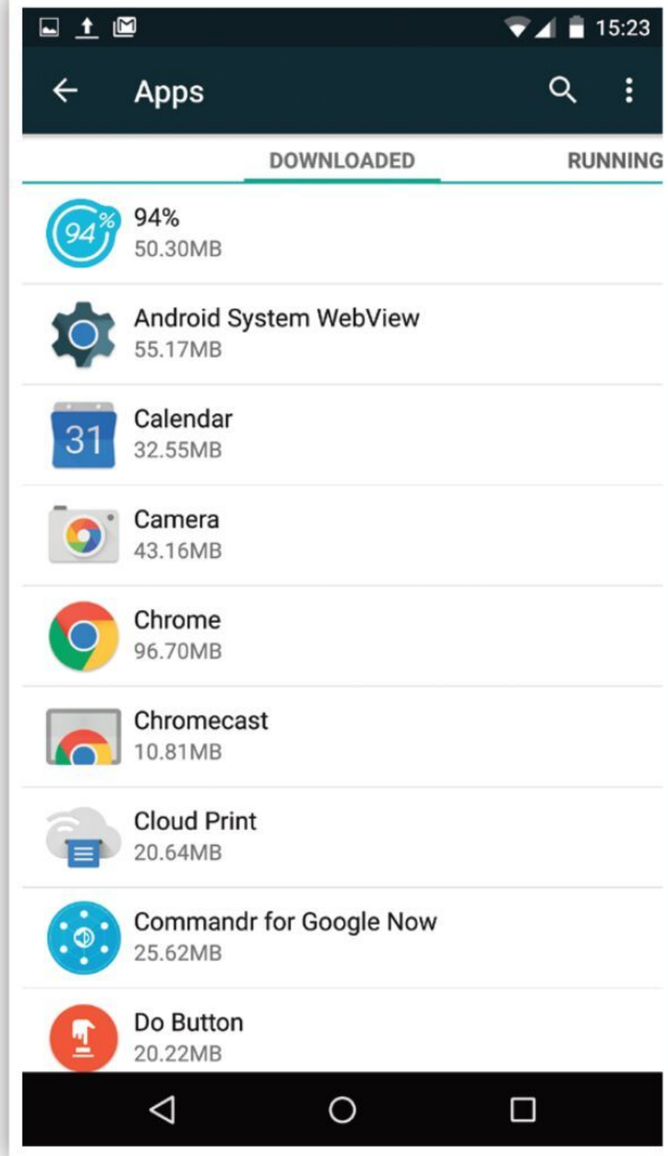
No matter which brand of Android device you choose, from Acer to ZTE, most are all guilty of containing at least a few examples of bloatware. Bloatware means apps or services added by the manufacturer or carrier which take up memory and processing power on a device. Unless you want to root your device, removing bloatware is not possible. Disabling it however is possible.

Application Settings

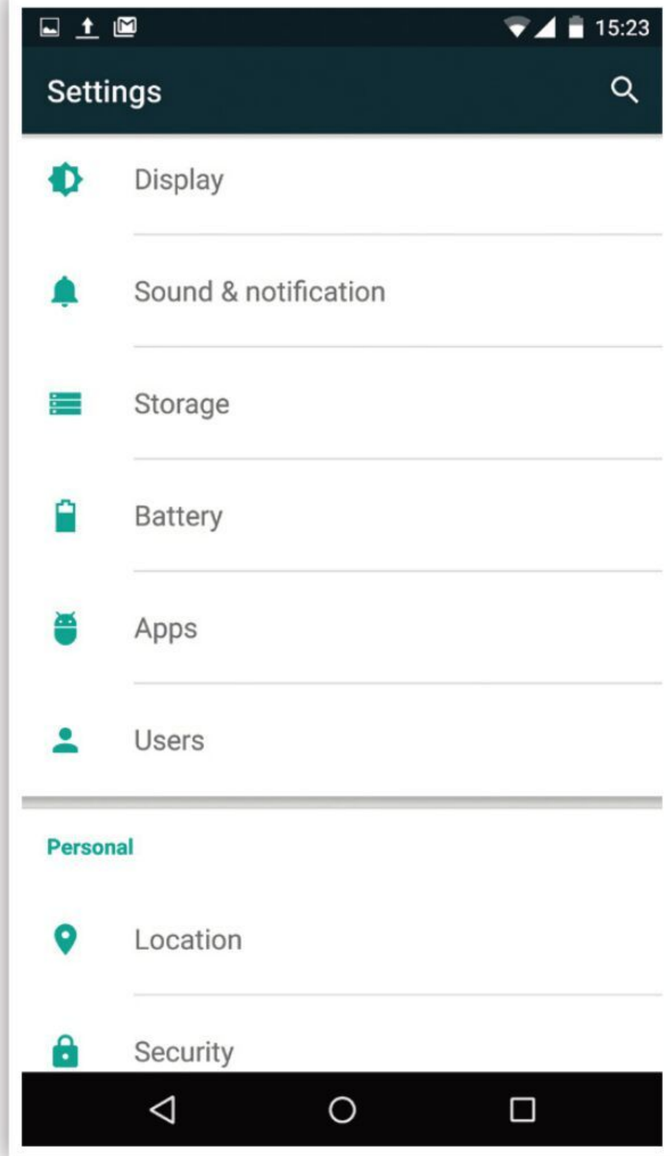
The exact location of the app settings will vary between devices. You should however, always be looking for Applications, App Management or App Settings.



1 When disabling bloatware, don't be fooled into thinking that just because you don't use a particular app or service that it is not essential to your device. Removing essential apps or services may cause problems with how your device works. It is therefore important that you understand exactly what you are disabling before you disable it.

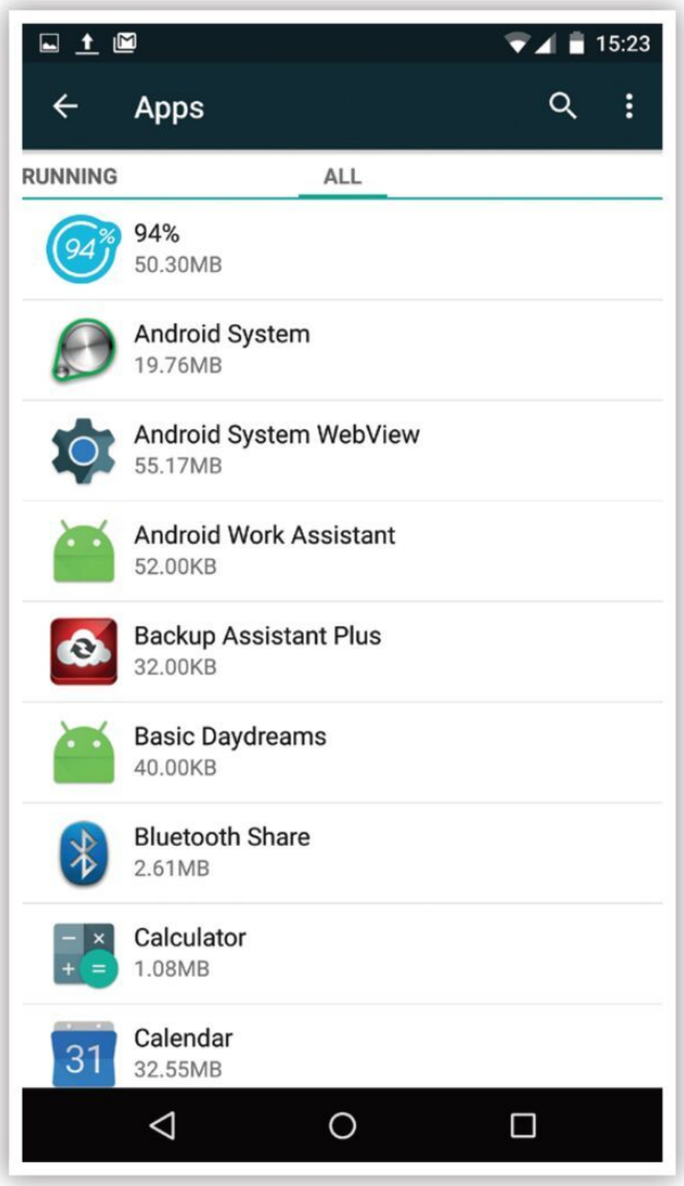


2 The best way to put a stop to bloatware safely, is to disable one app at a time. Once you have disabled an app, check that your device is still working as it should before you go ahead and remove the next bit of bloatware. This makes the task of removing bloatware more labourious, but reduces the risk of disabling something important by mistake.

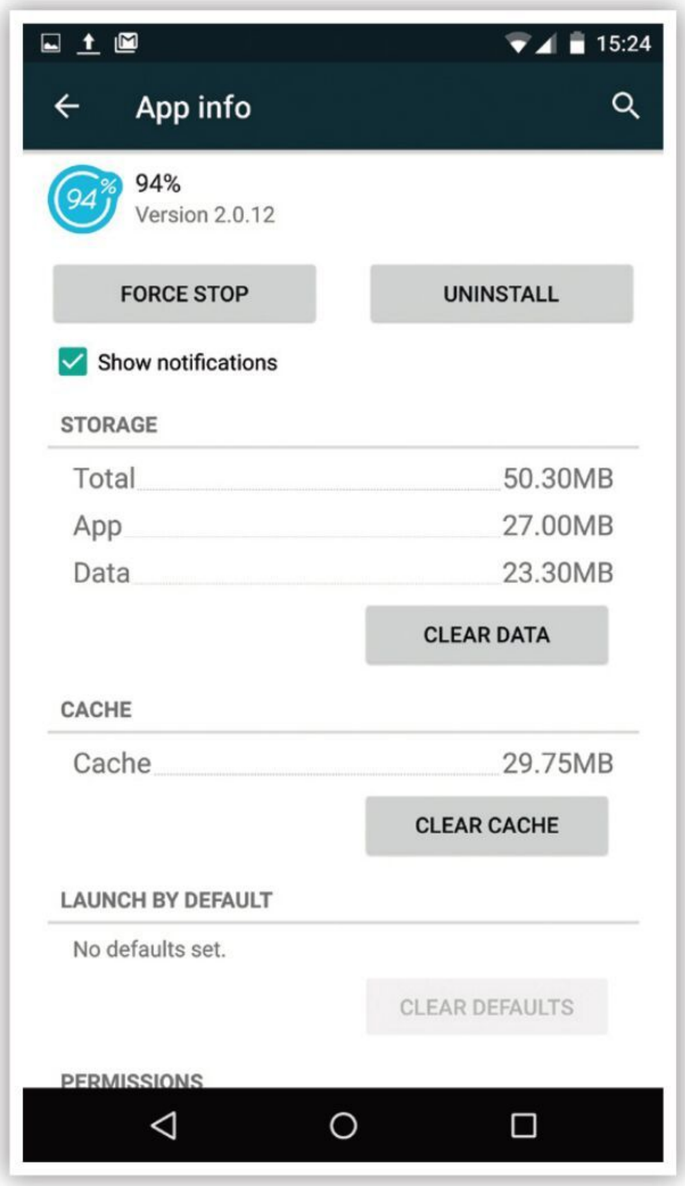


3 To actually begin disabling bloatware on your Android device, open the main settings app on and look for Application Manager. This may be in the main settings list under Apps or, on some older devices, under the More tab at the top of the main settings screen. The application manager is a great tool for viewing exactly what apps are running at any given time.

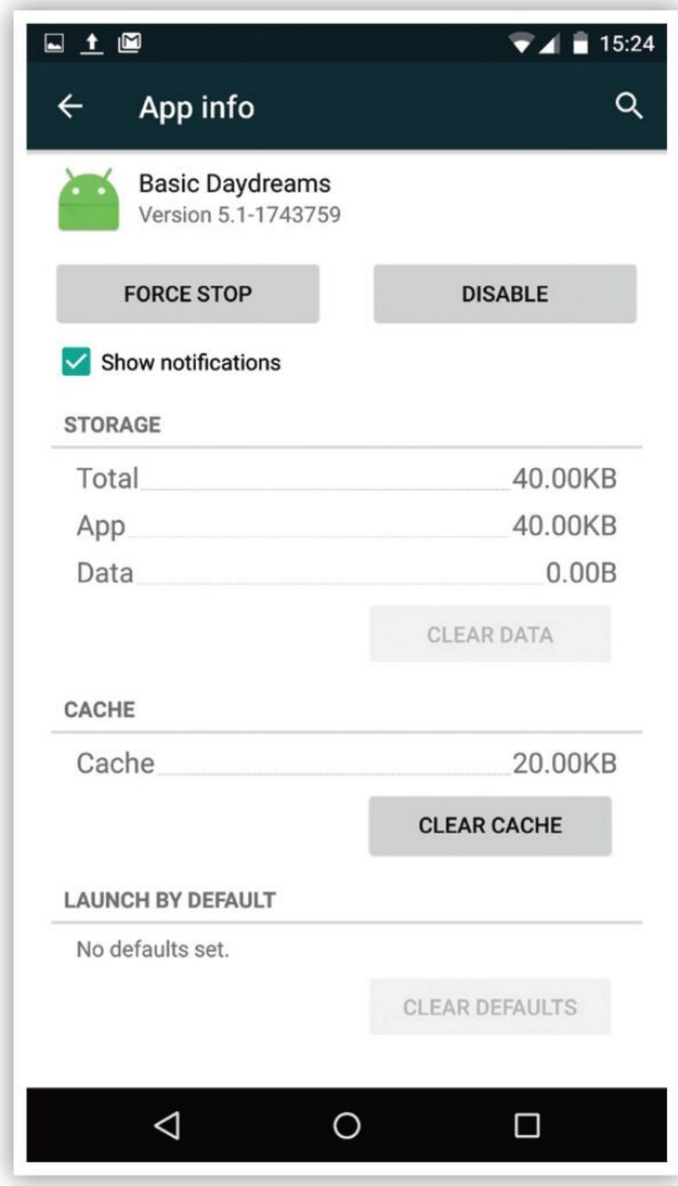
Disable Android Bloatware



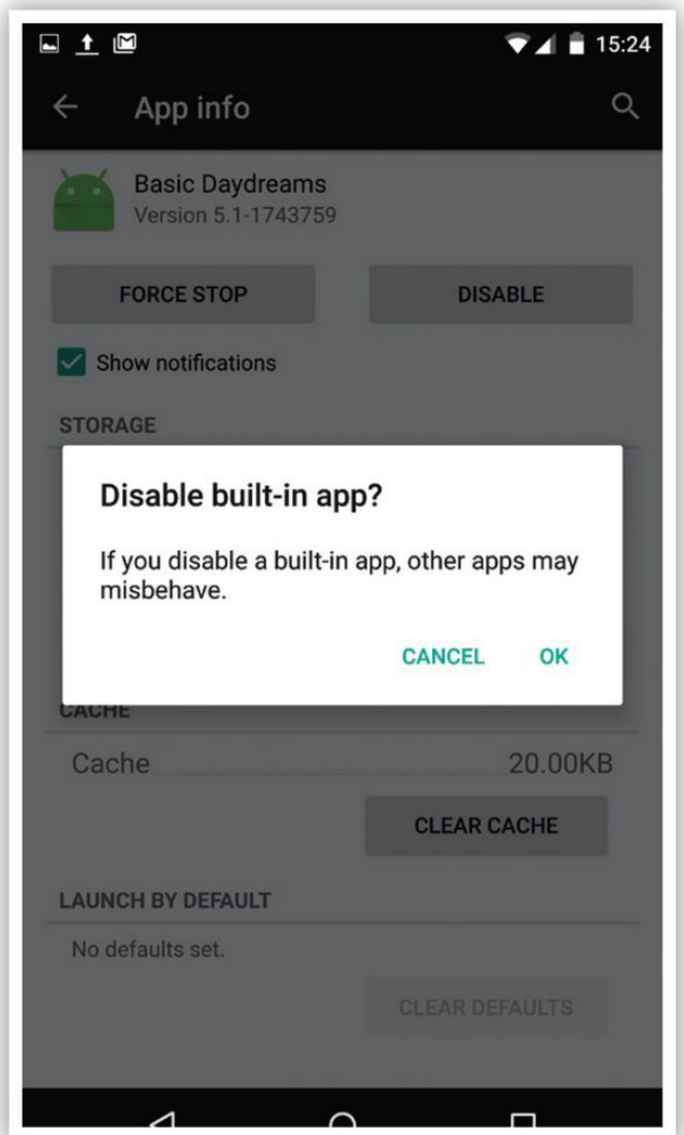
4 Tap Application Manager and swipe across the screen to the left. This will reveal the different application categories (Downloaded, On SD Card, Running and All). To find bloatware, go to the All tab.



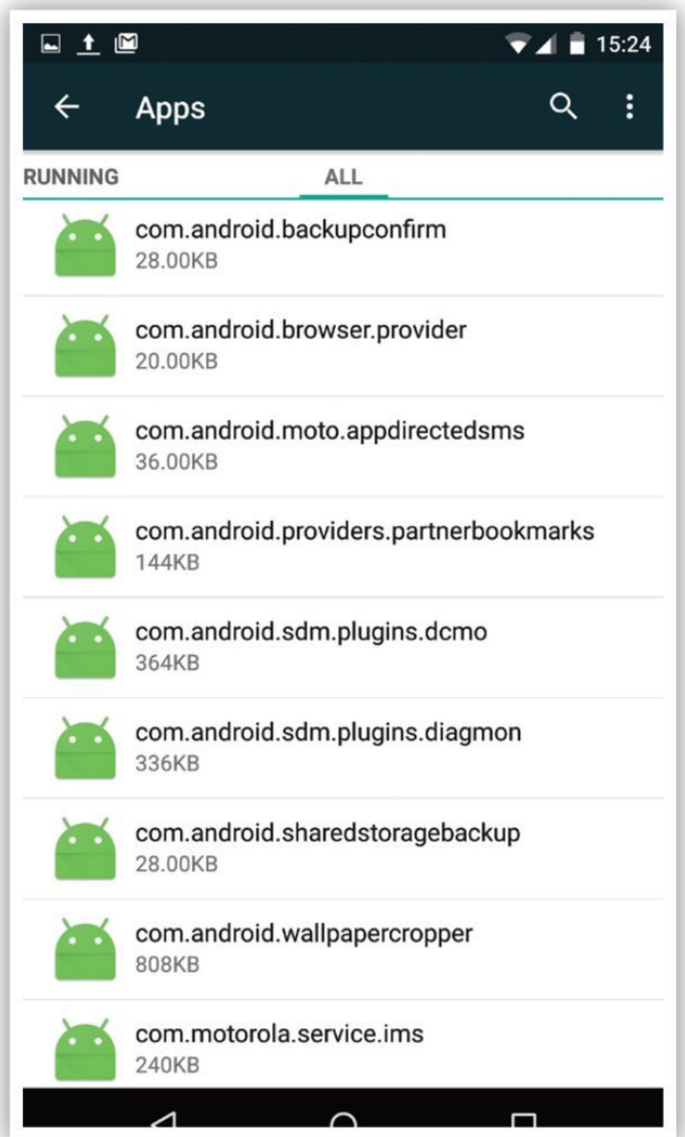
5 When you find an app or service that you think you would like to disable, tap on the name. If the app or service is not bloatware, you will see an Uninstall button next to the Force Stop button (you might also see uninstall updates).



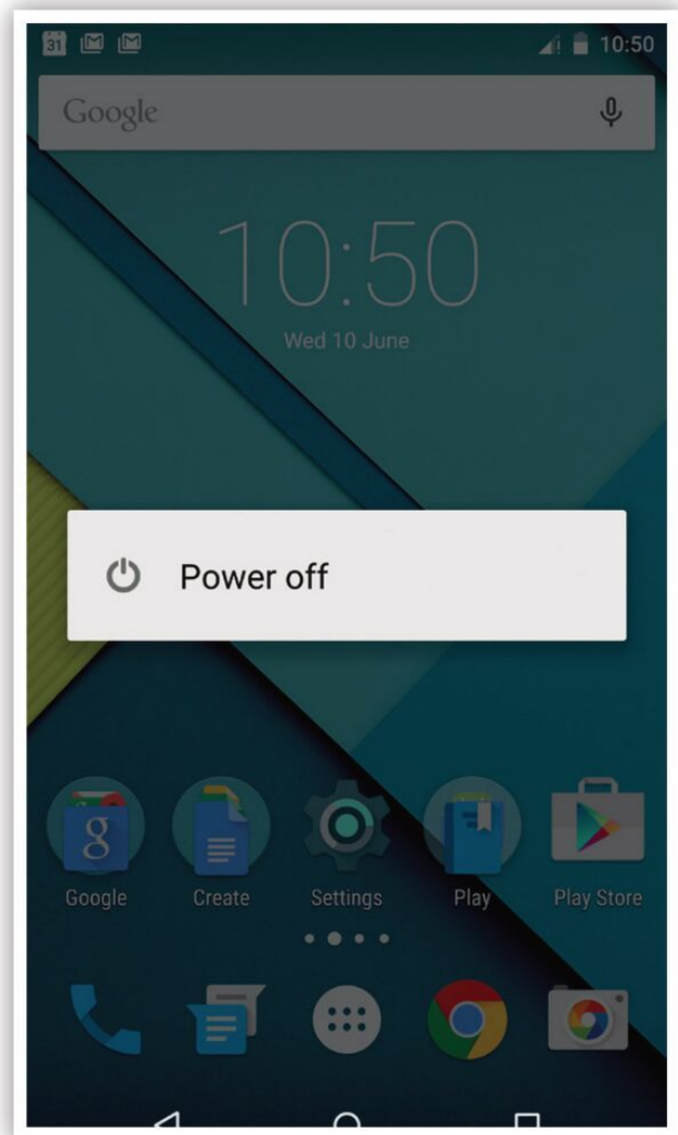
6 When you find a bloatware app or service, the Uninstall button will say Disable instead. Some essential system services (such as the camera app or the Android system) will have the Disable button greyed out so it cannot be used.



7 Click Disable on the bit of bloatware you want to stop. A warning will appear to tell you that completing this action may cause some apps to work incorrectly or not at all. Disabled apps will not appear in the app drawer.



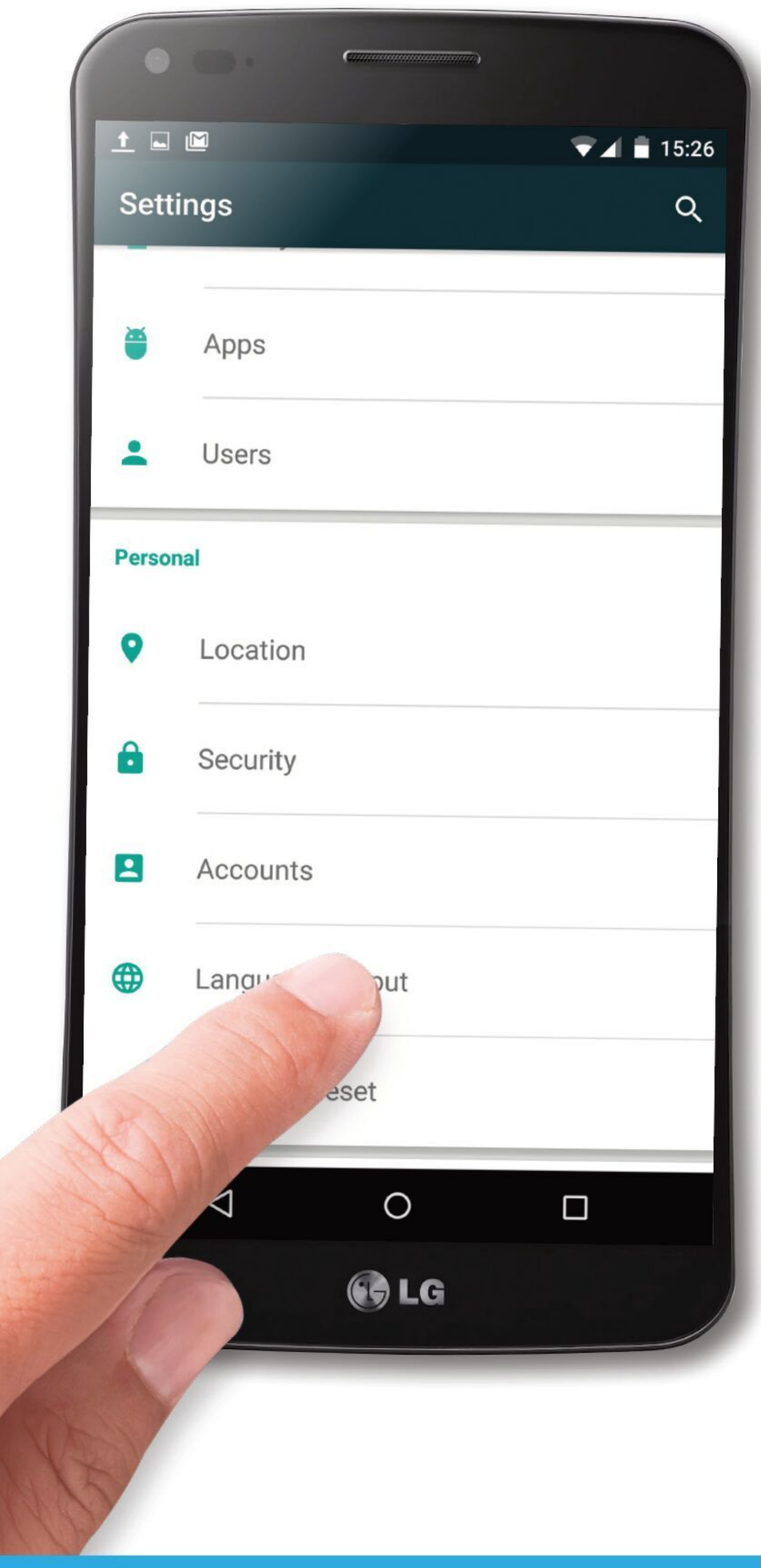
8 As a general rule, any app or service that should not be disabled will have an Android icon next to the name in the Application Manager. If you disable something by mistake, a restart of your device will often fix the error.



9 When you finish disabling the bloatware you no longer want to have running, you may need to reboot your device for the icons to be removed from the home screen and main app drawer. It is best to perform a hard reset for a full reboot.

Sideloading Android APKs

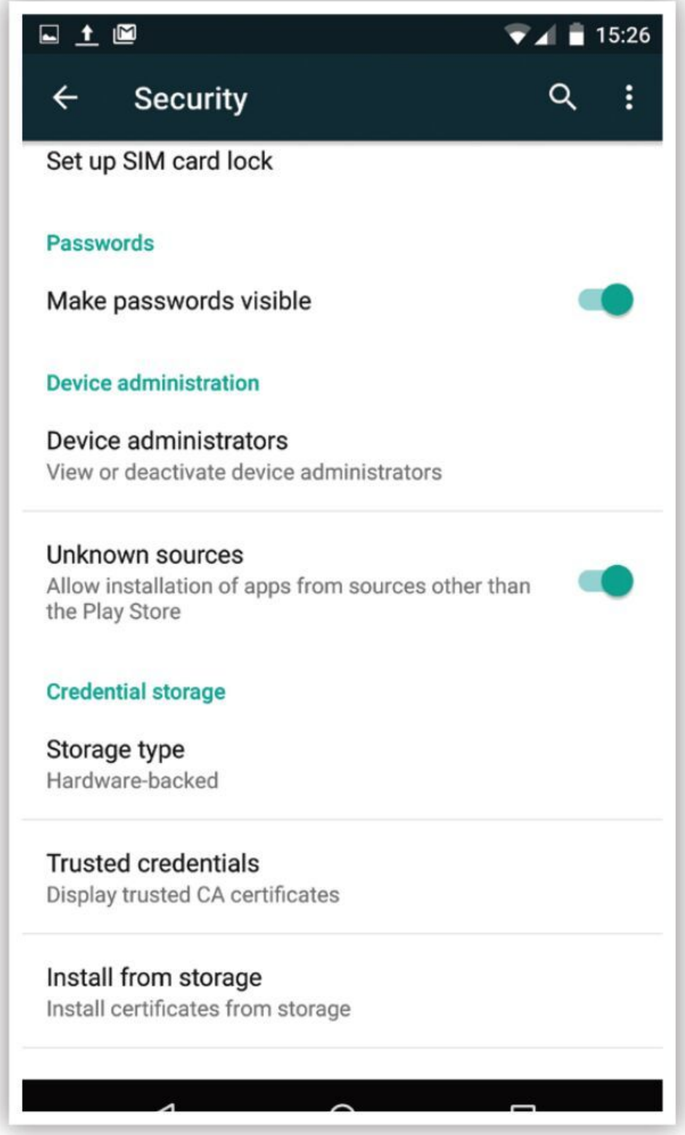
There are hundreds of thousands of apps available on the Google Play Store, from Angry Birds to Twitter to Groupon. Occasionally, there might be an app you want which isn't, for several possible reasons, available through the official download method. Although there are risks involved, it is possible to install apps using other methods. This is known as Sideloading.



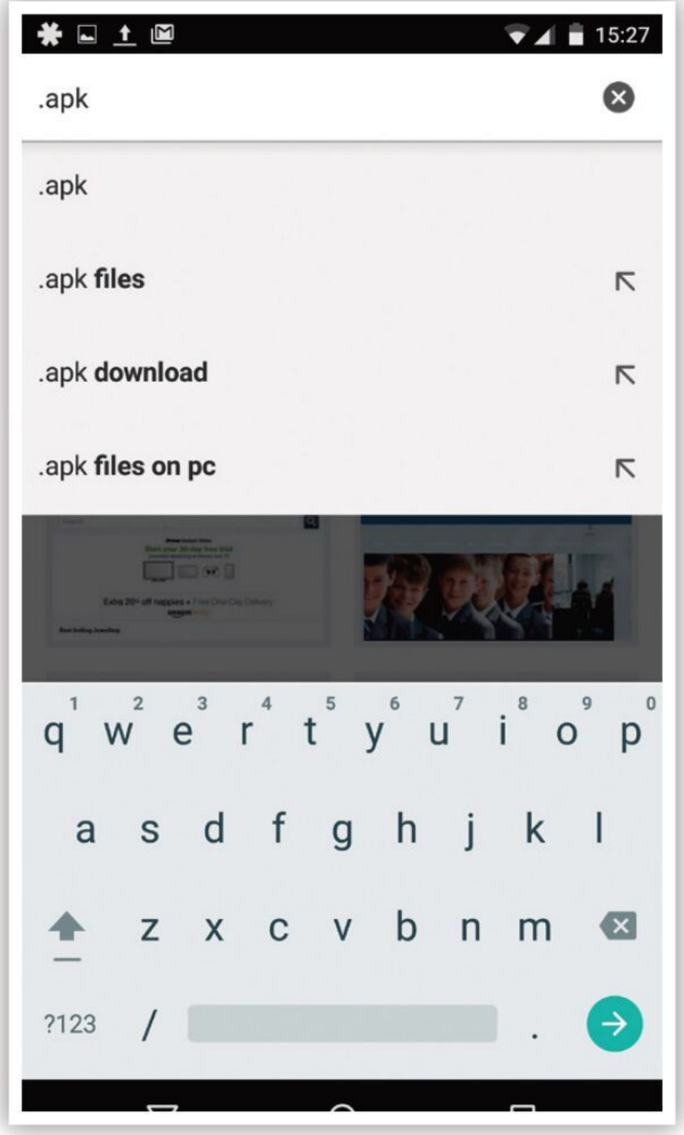
Sideload with Confidence

Sideloading is inherently more risky than installing .apks from the Google Play store but as long as you take care, your device should be safe.

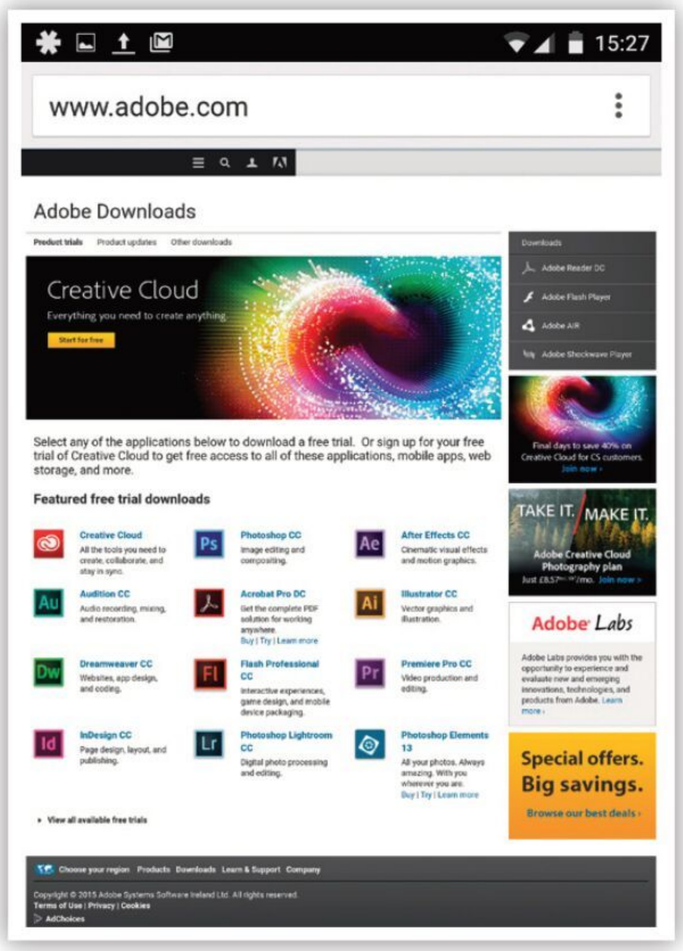
1 On your device (or any device running Android 4.0 or higher), tap the Main Settings app, tap the More tab and scroll down to Security. Under the Device Administration heading, select Unknown sources.

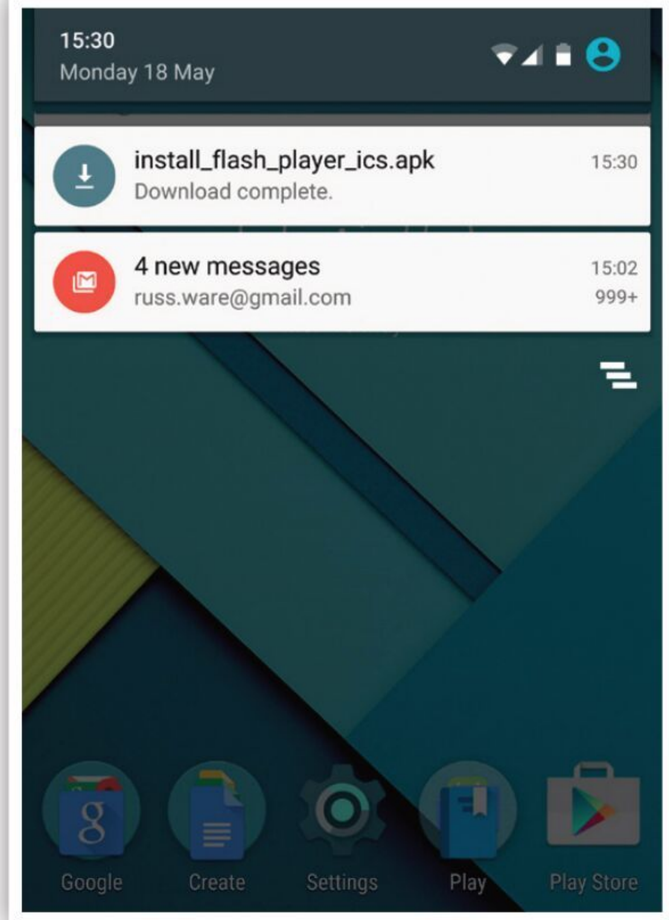


2 Selecting this option will allow you to install apps outside of the Google Play Store. Depending on your device, you can also choose to be warned before installing harmful apps by selecting Verify Apps.



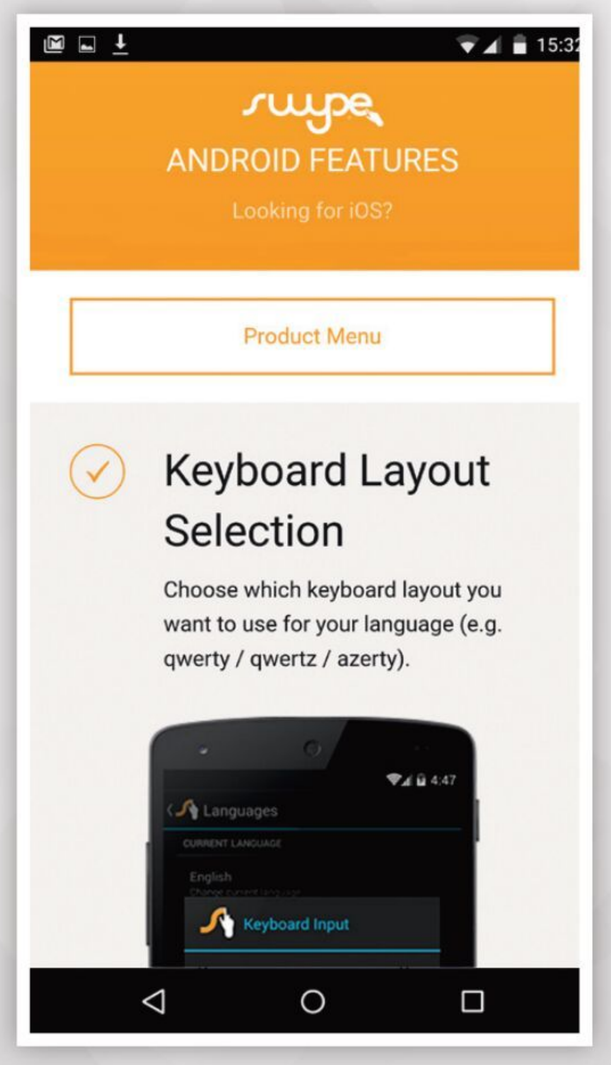
3 The next step will be finding an Android package file, also known as an APK, which is the way Android apps are packaged, distributed and installed. APKs can be found quite easily with a Google simple search.





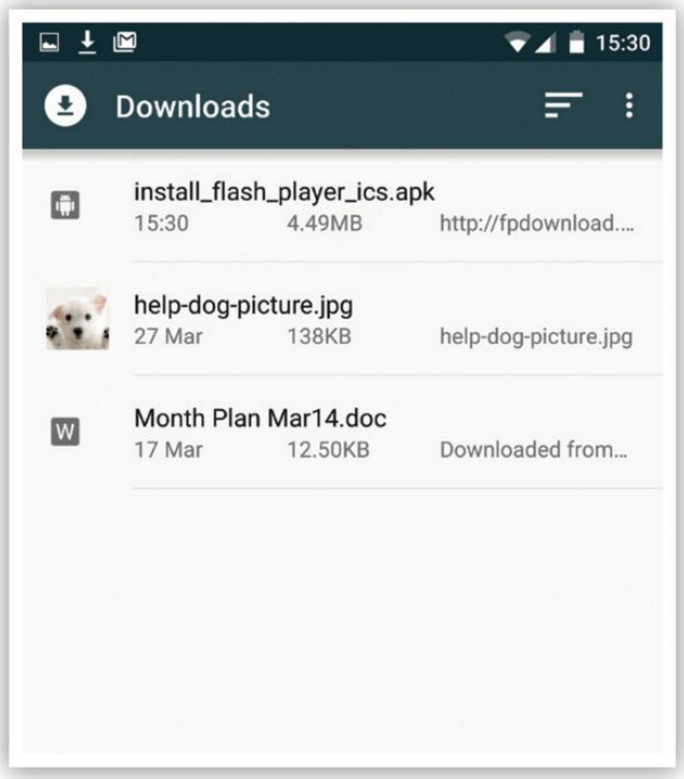
Sideloading Explained

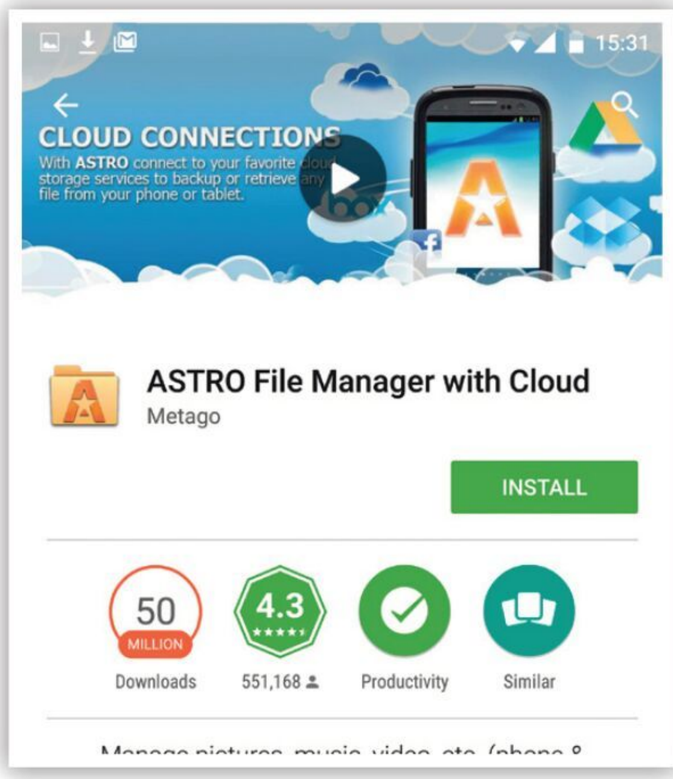
Sideloading is a term used in Internet culture, similar to "upload" and "download", but in reference to the process of transferring data between two local devices, in particular between a computer and a mobile device such as a mobile phone, smartphone, PDA, tablet, portable media player or e-reader. Sideloading typically refers to media file transfer to a mobile device via USB, Bluetooth, Wi-Fi or by writing to a memory card for insertion into the mobile device. When referring to Android apps, "sideloading" typically means installing an application package in APK format onto an Android device. Such packages are usually downloaded from websites other than Google Play. Sideloading of apps is only possible if the user has allowed "Unknown Sources" in their Security Settings.



4 You should never use sideloading as a way to pirate applications. This is an almost sure-fire way of your Android device getting a virus. You should only download APK files from trusted developers and companies.

5 The easiest way to download and install an APK file is on your device. Use Chrome or the stock Android browser to navigate to the download page for the APK. You can also download on a PC and transfer the file.





6 Go to your app drawer and click Downloads; here you will find the file you just downloaded. Open the file and install the app. If you downloaded the APK file on your computer, the process is slightly different.

7 You will need to connect your Android device to a PC in USB mass-storage mode. Drag and drop the file onto your device and then, using a file manager such as Astro, you can locate the file on your device and install it.

Risks of Sideloading

If you take precautions, the risk of installing apps from sources other than the Google Play Store is actually pretty minimal. Here are a few things to consider before sideloading.

Untested Software – Software which doesn't work as it should is probably the least of the possible risks when sideloading apps onto your Android device. Be especially wary if paying for apps.

Virus Infection – The Google Play Store is pretty good at weeding out viruses hidden in apps, but you simply don't have that protection when sideloading. Ensure you have good anti-virus software.

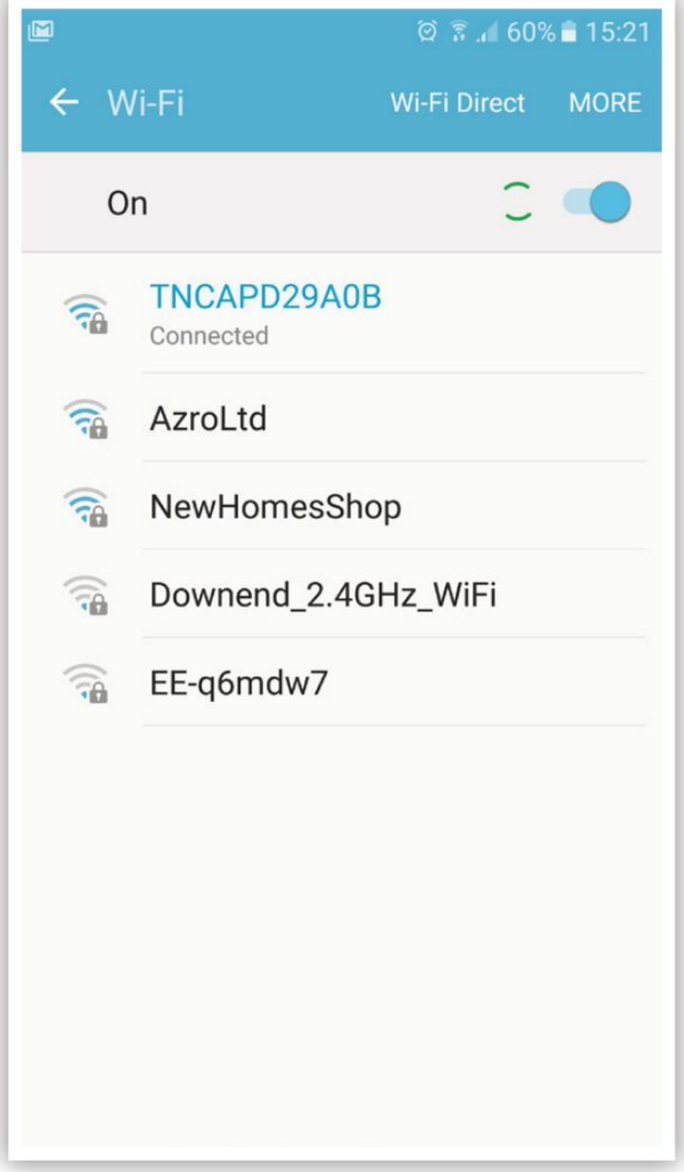
Malware or Spyware – Although similar to a virus, malware or spyware is not generally as damaging. It is more likely to slow your device down than kill it. Again, security software is a must.

Smart Home on a Budget

If you have deep pockets, it is now possible to completely transform your house into a Smart Home, with a single portable control system for everything from lights and music, to heating and security. These bespoke systems cost several thousand, and take a lot of work to install. However, if you are clever, and do some creating thinking, it is possible to create a smart home on a budget.

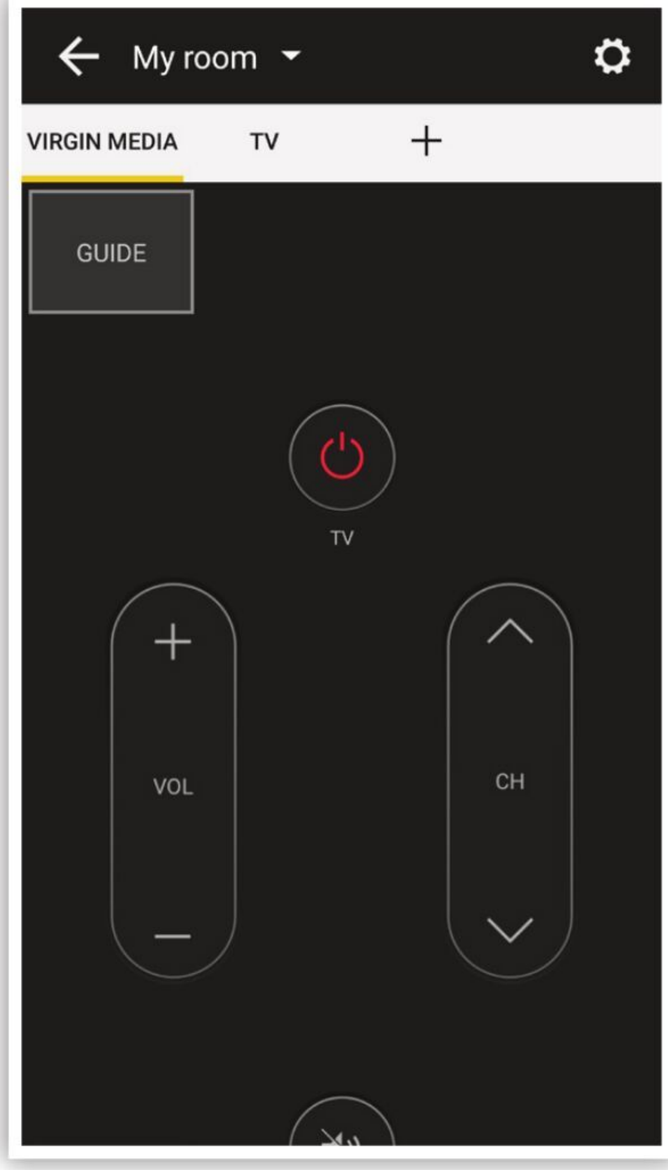
Smart Home Essentials

If you want to add Smart Home features to your home, you will need to ensure a few essentials are in place first, aside from the Smart gadgets we will look at in a moment.



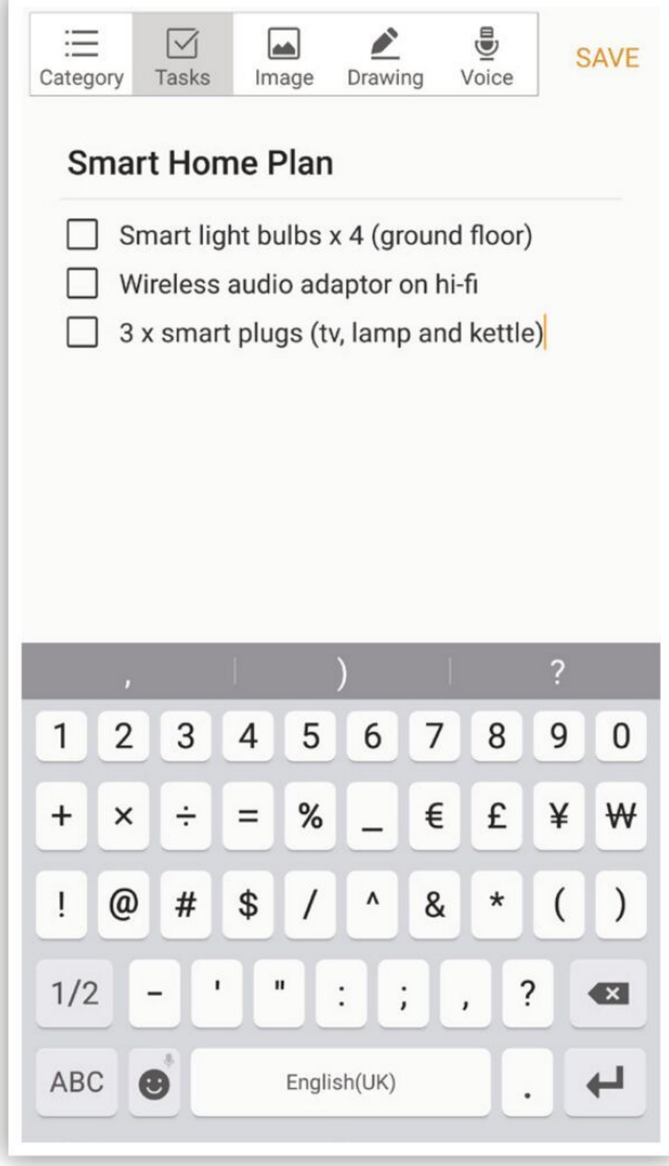
1 – Wi-Fi

Almost without exception, Smart tools and gadgets will need to connect to a Wi-Fi network to work properly. This is how the devices share information, and how they are remotely controlled. This means you need to have a fairly strong and stable Wi-Fi network set up in your house. Without a Wireless network in place, a Smart Home on a budget is just not possible.



2 – Controls

The Smart Home gadgets we will be looking at here all require a companion controller app to be installed on a phone or tablet. This can be inconvenient to have on your current phone, so ideally use an old phone or tablet as a dedicated controller (the phone or tablet doesn't need to be very powerful, but remove anything not needed for the Smart Home control).



3 – A Plan

There are limitations with this budget Smart Home setup, as you might expect. For example, it is unlikely that you will be able to replace every lightbulb with a smart lightbulb and control all of them from a single app. It is therefore important to have a plan as to what your priorities are. For example, just having smart bulbs in your lamps, not the main light fittings.

Smart Home Gadgets

Let's take a look at some of the many Smart Home gadgets available, to hopefully give you ideas for your own budget Smart Home.

Awox SmartLED 7w Bulb

Price: From £19.99 $16.49 €19.99

www.mobilefun.co.uk/.com

Perhaps the most simple Smart Home tech, these smart bulbs are affordable, reliable and can be set up to be controlled individually or as a group from a single easy-to-use app. You can control both the brightness and the colour of the bulb wirelessly.

D-Link Smart Plug

Price: From £24.99 $29.99 €29.99

www.mobilefun.co.uk/.com

The D-Link Home Smart Plug lets you turn electronic devices on or off from anywhere inside or outside your home. The smart mains adapter controls your devices through an internet connection to provide wireless control for your TVs, heaters and much more.

Avantree Saturn

Price: From £39.99 $43.49 €44.99

www.mobilefun.co.uk/.com

The Avantree Saturn is both a Bluetooth receiver and transmitter allowing you to connect Bluetooth music devices to non-Bluetooth speakers or vice-versa. This means you can use your old-school CD player with your latest Bluetooth speakers and because Avantree have used the latest 'aptX' decoder the music is HD quality.

Perfect Bake Smart Baking

Price: From £44.99 $48.49 €49.99

www.mobilefun.co.uk/.com

Perfect Bake includes everything you need to achieve this, creating delicious cookies, muffins and all kinds of tantalising snacks and treats that will make your mouth water. Perfect Bake does all the measuring for you, taking any of the complication away and helping you become a master chef.

Spigen Pan & Tilt HD Camera

Price: From £75.00 $80.99 €79.99

www.mobilefun.co.uk/.com

Monitor your home from anywhere with the Wi-Fi enabled HD Camera from Spigen. Featuring two-way audio, night vision, pan and tilt controls, you can be assured of seeing the whole picture no matter what the time of day. 720P HD video monitoring with IR-Cut provides a crystal clear picture.

Samsung SmartThings

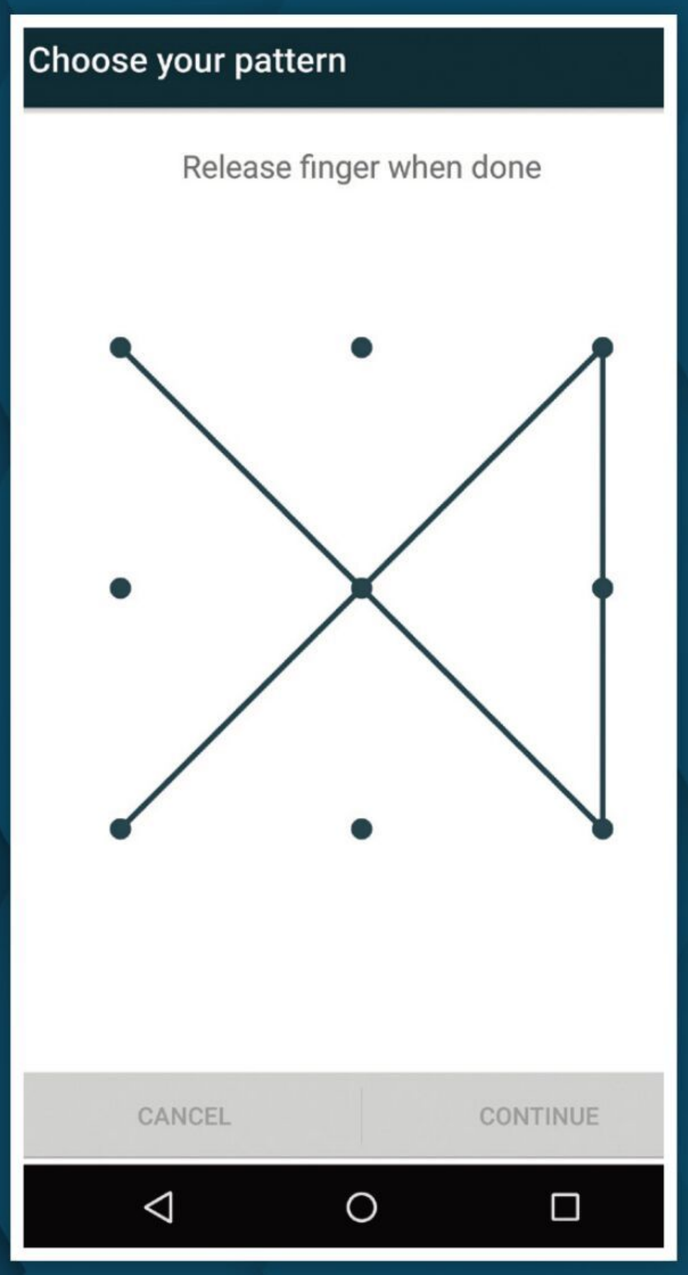
Price: From £199.99 $199.99 €199.99

www.mobilefun.co.uk/.com

The SmartThings Starter Kit lets you monitor, control and secure your home from anywhere. Including in the Starter Kit are a number of devices from the Samsung SmartThings range including the Hub, Motion Sensor, Multi Sensor,

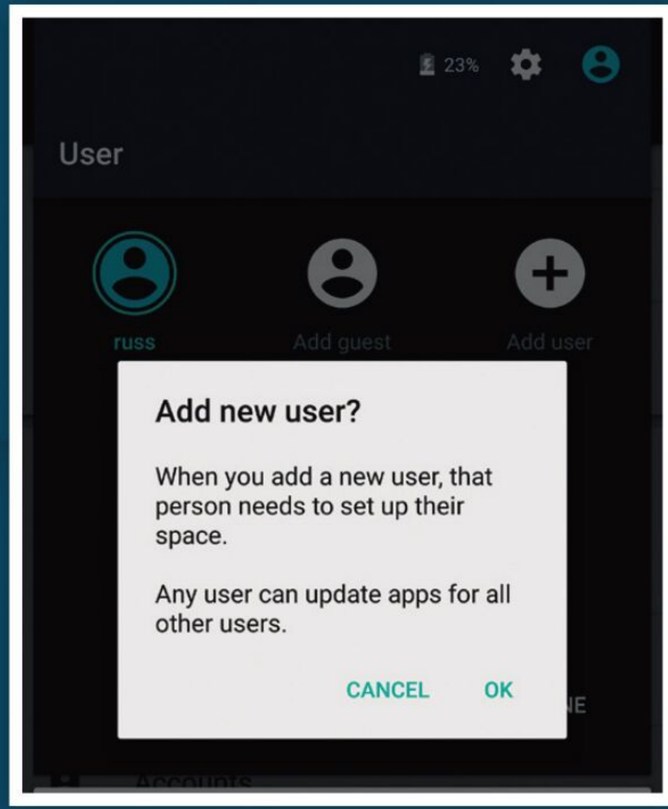
10 Android Security Tips

Gone are the days when your phone was just your phone. Now we are using our Android phones more often to store passwords, banking details, emails and other valuable information. Before you even begin adding this sort of information to your phone, you need to think about mobile security.



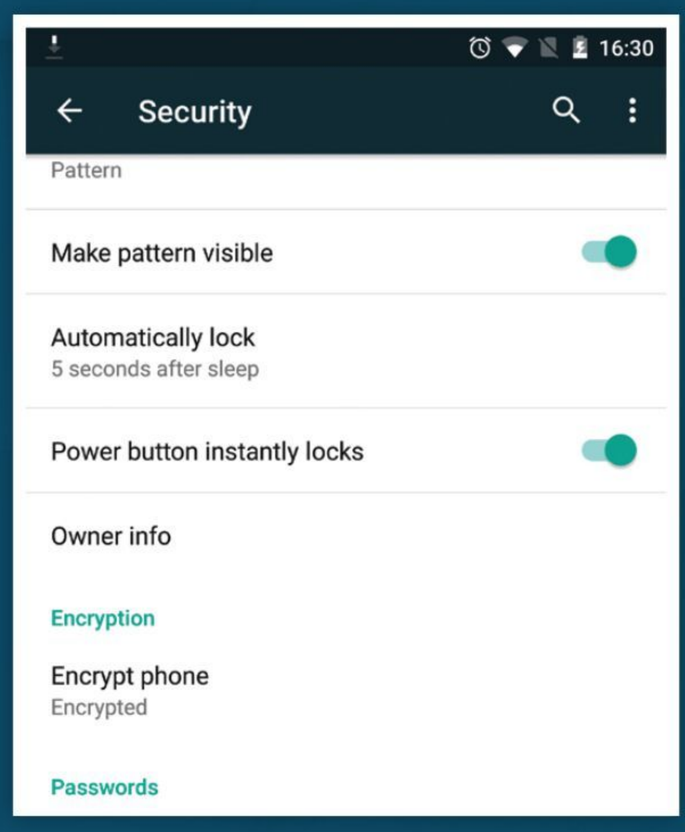
1. Add a Screen Lock

It has probably been said to you before, but setting up a screen lock pattern, password or PIN is an essential security step; one which every user should make a priority as soon as their device is set up. PIN and password locks are the most secure option, but a pattern lock generally offers faster access to your device and is easier to remember for most users. If you do use using a pattern lock, at least make it complicated enough that it can't be easily guessed. Several of the more advanced Android security features will require a screen lock in place before they can even be set up, let alone used effectively.



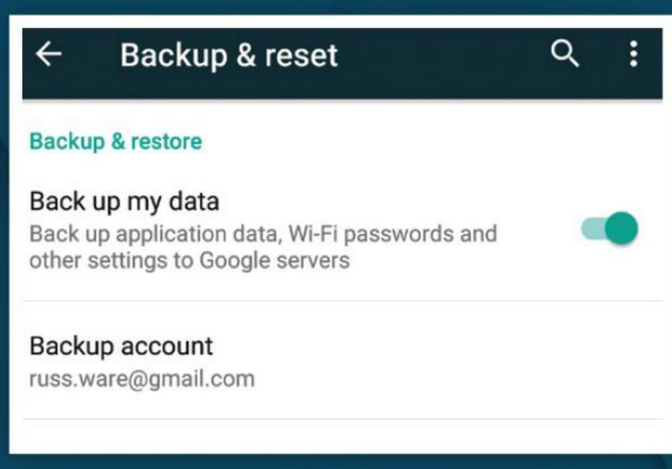
2. Set Up User Profiles

If your device is to be shared with other members of your family, take advantage of the User Profile option and give everyone their own secure area. Each user gets to have their own email account, apps and photo store, so your privacy (as well as theirs) is preserved. If you are just letting a friend or colleague use your device for a few minutes, set up a Guest Profile instead. This provides a short-term, secure account for the guest to use, without giving access to your private data.



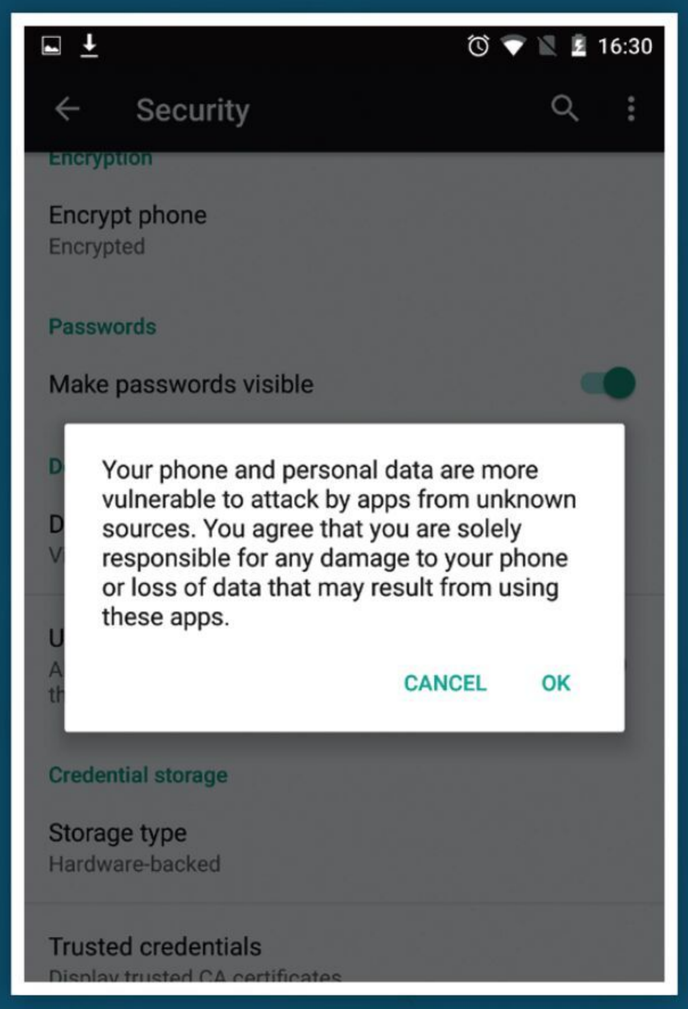
3. Encrypt Your Data

Encrypting the data on your device adds an extra layer of protection if your phone or tablet is lost or stolen. Encryption stores your data in a form that can only be read if you have the right credentials. You can encrypt all the data on your Android device, including your account data, app data, music and other media, and downloaded information. You can add encryption via the Security menu in Settings. On devices running Lollipop, you will be asked if you want to add an additional sign-in on boot when setting a screen lock.



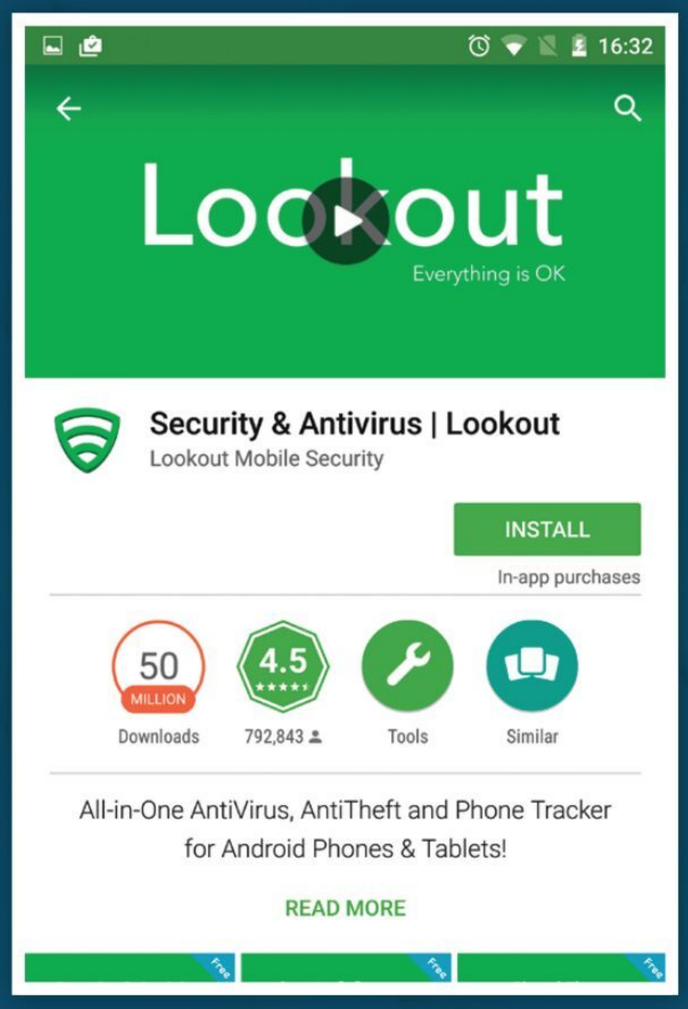
4. Back Up Regularly

Regular backups should definitely be a part of your Android security setup. While having current backups doesn't actually make your device more secure, it does make losing or breaking your phone much easier to recover from. Google can easily be set to create automatic backups in Settings > Backup my Account.



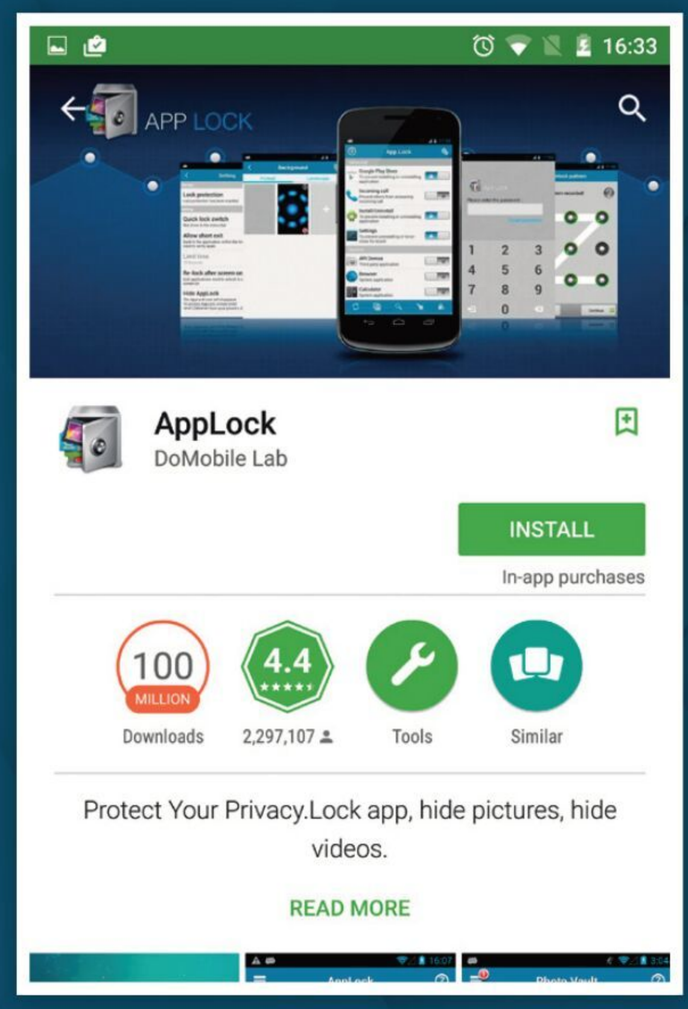
5. Let Google Verify Apps

All of the apps available on the Google Play Store have been checked and verified by Google. It is possible, however, to install apps from sources other than the official store, and these apps can contain harmful software. If you install apps from other sources, you can turn on app verification to make sure the apps you install are scanned for malware. Open Settings > Security and turn on Scan Device for Security Threats.



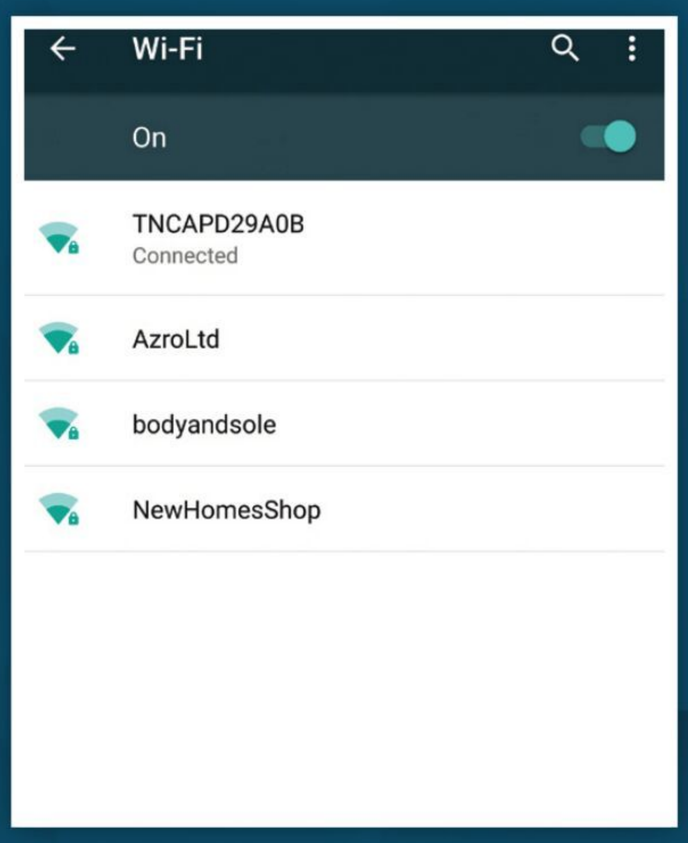
6. Install a Security App

Although Android devices provide lots of security tools right out of the box, it is still a good idea to install a reputable third-party security or anti-virus app such as 360 Security, Avast Antivirus & Security or Lookout Mobile Security. Many of these not only allow you to scan for viruses and malware, but also include real-time browser scans and performance-boosting tools. It is worth trying out a few to see which one works best for you.



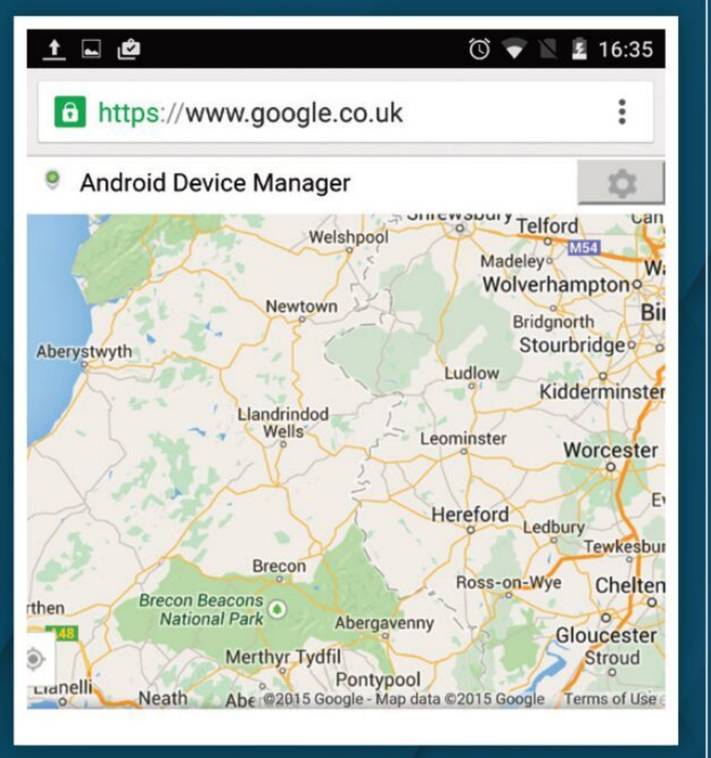
7. Lock Your Apps

Locking individual apps is a secondary layer of security to prevent anyone from using your lost device if they have managed to bypass your locked Android. You can use a free app like App Lock for this purpose. The idea here is not to lock every single app in your device; just the data-sensitive ones like your Email apps or file managers. Some devices include a locked area which can be used for this purpose without installing extra software.



8. Avoid Unsecured Networks

Never join an unsecured network. This is especially true when doing business with your smartphone or tablet, but it should really be the general rule for any mobile devices. If you often work in coffee shops and restaurants, and need to connect to the Internet, only use those networks with a password. If you do have to work on a wireless network with no password, make sure you don't transmit sensitive data.

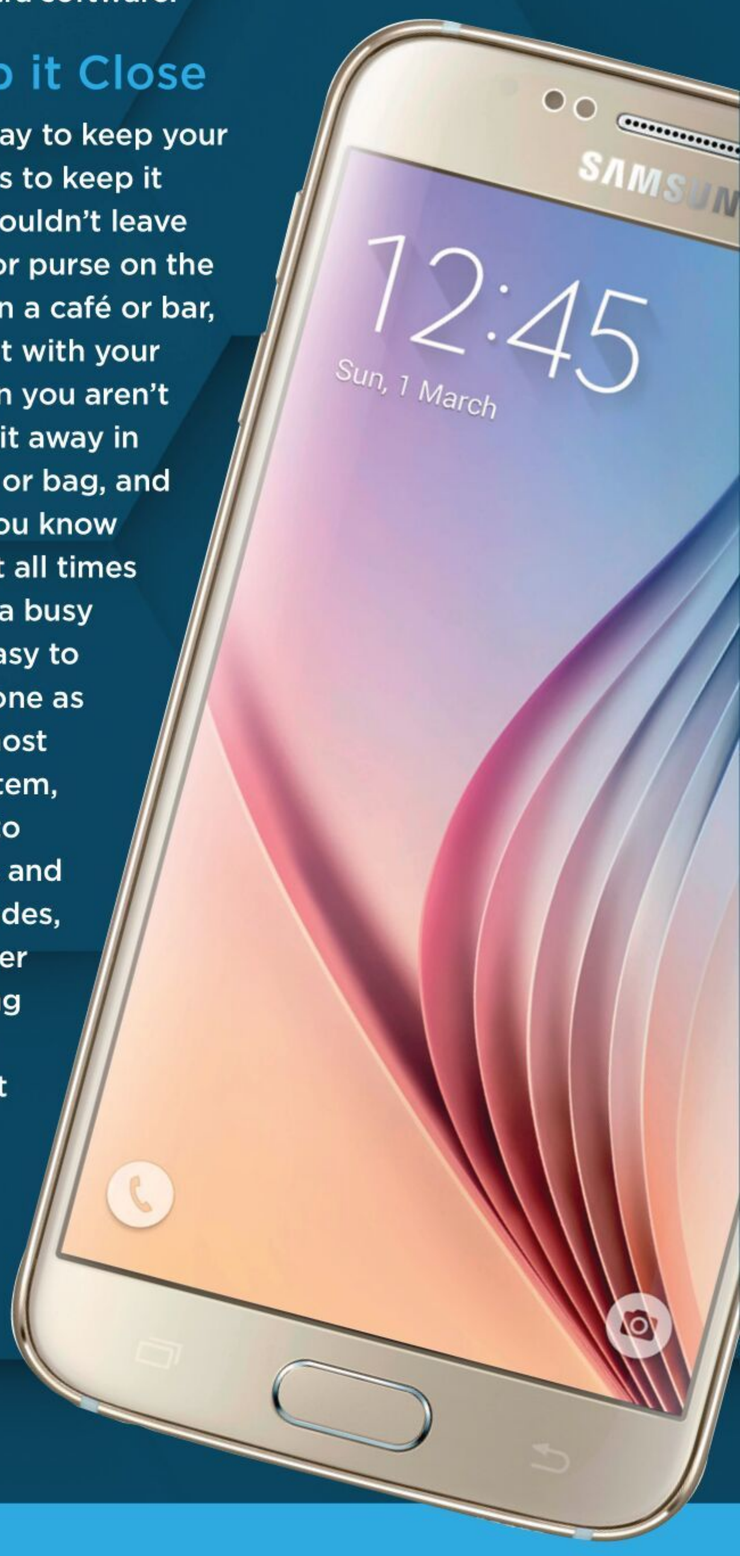


9. Enable Android Device Manager

Android Device Manager comprises a set of tools which you can access through your computer browser. If you lose your Android device, you can use Android Device Manager to show its location using GPS, make it ring at full volume, lock it remotely, and wipe it remotely. Some devices will have ADM automatically enabled, while others will require you to enable it in the Security Settings. Once enabled, you can access ADM on any browser at www.google.com/android/devicemanager.

10. Keep it Close

The best way to keep your device safe is to keep it close. You wouldn't leave your wallet or purse on the table when in a café or bar, so don't do it with your phone. When you aren't using it, put it away in your pocket or bag, and make sure you know where it is at all times if you are in a busy place. It is easy to see your phone as a cheap, almost disposable item, largely due to carrier deals and yearly upgrades, but remember that replacing your device mid-contract can be expensive.



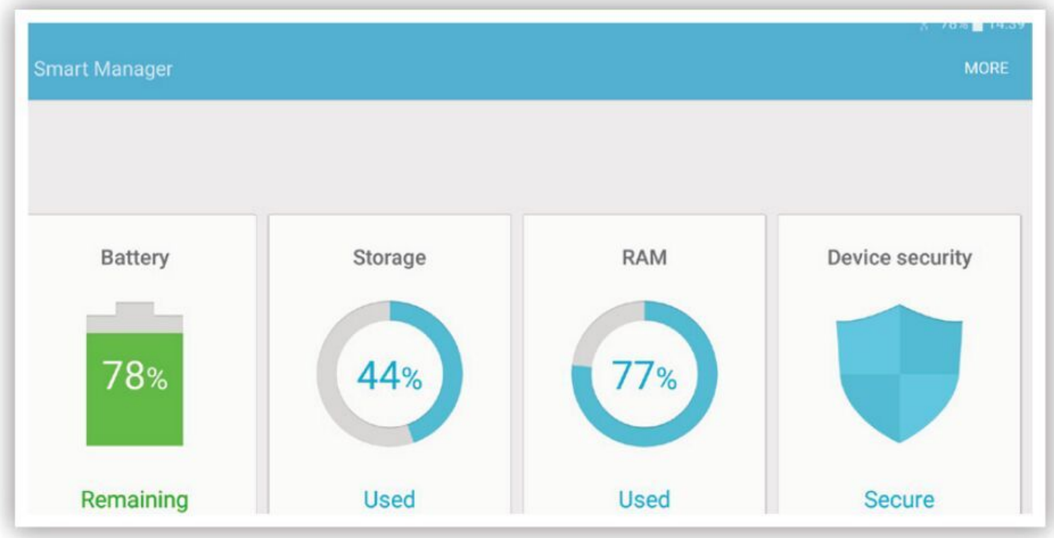
Clean Up with Smart Manager

Smart Manager is a fairly new tool from Samsung, pre-installed on many new devices and available as a download on the Galaxy App store if not. It combines several tools and utilities into a single app interface, making it easy to quickly check things like battery level and usage, storage capacity remaining and amount of RAM being used. Like similar third-party apps (CleanMaster etc.) it provides both detailed information and one touch optimisation.

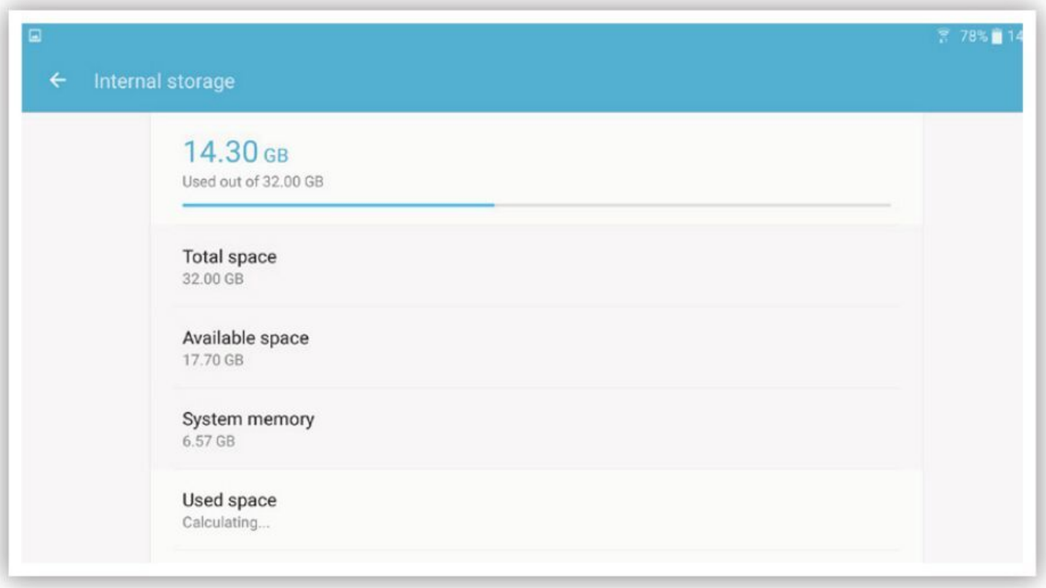
App Management

Smart Manager is a very useful tool, or collection of tools, which helps you keep your device running faster and more smoothly at the touch of a button.

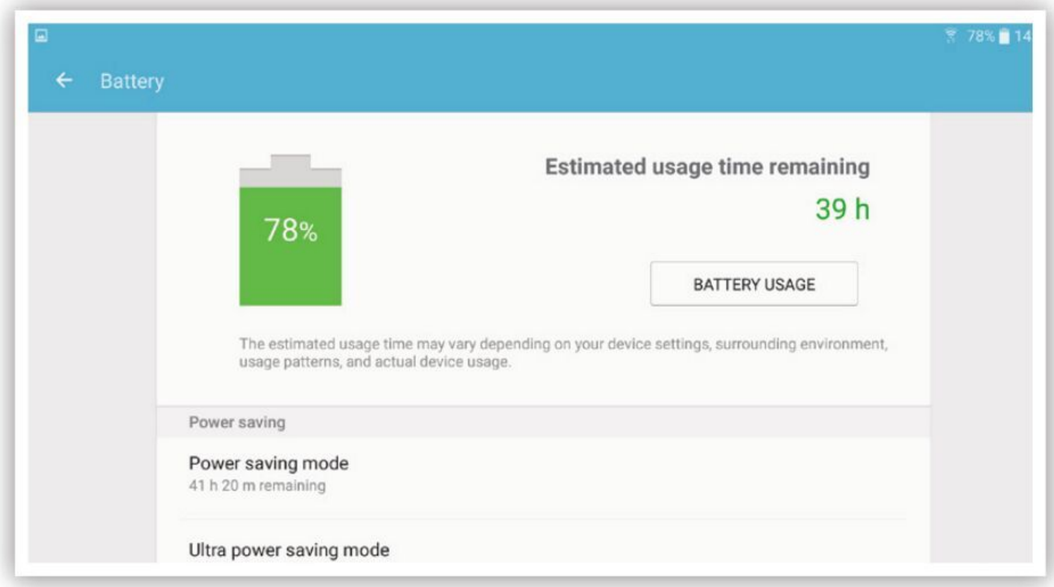
1 Smart Manager can be found in the main app drawer of your Samsung Galaxy device. As mentioned if it isn't pre-installed you should be able to download and install it through the Galaxy Apps store. If you are using a Galaxy S6, Galaxy S6 Edge, Galaxy Tab S2 or Tab S, you already have it.



2 Tap the icon to open Smart Manager and you will see a fairly simple interface. The four main areas of the app are: Battery Remaining, Storage Used, RAM Used and Device Security. At the bottom of the screen you will see a button labelled "Clean All" which allows for quick device optimisation.

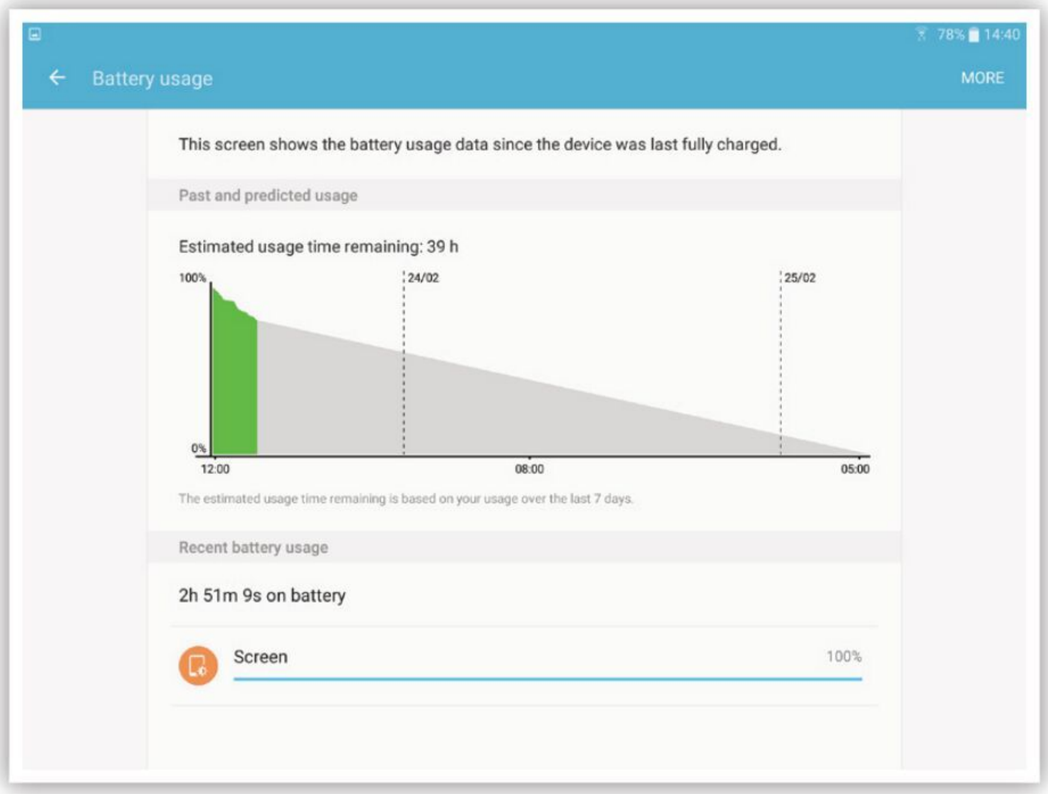


3 Each of the sections, when tapped, leads to a new screen showing more detailed information and usually more optimisation options and advice. You can watch in real time as the battery drains or the RAM is used by background apps and services (if you have nothing better to do...).

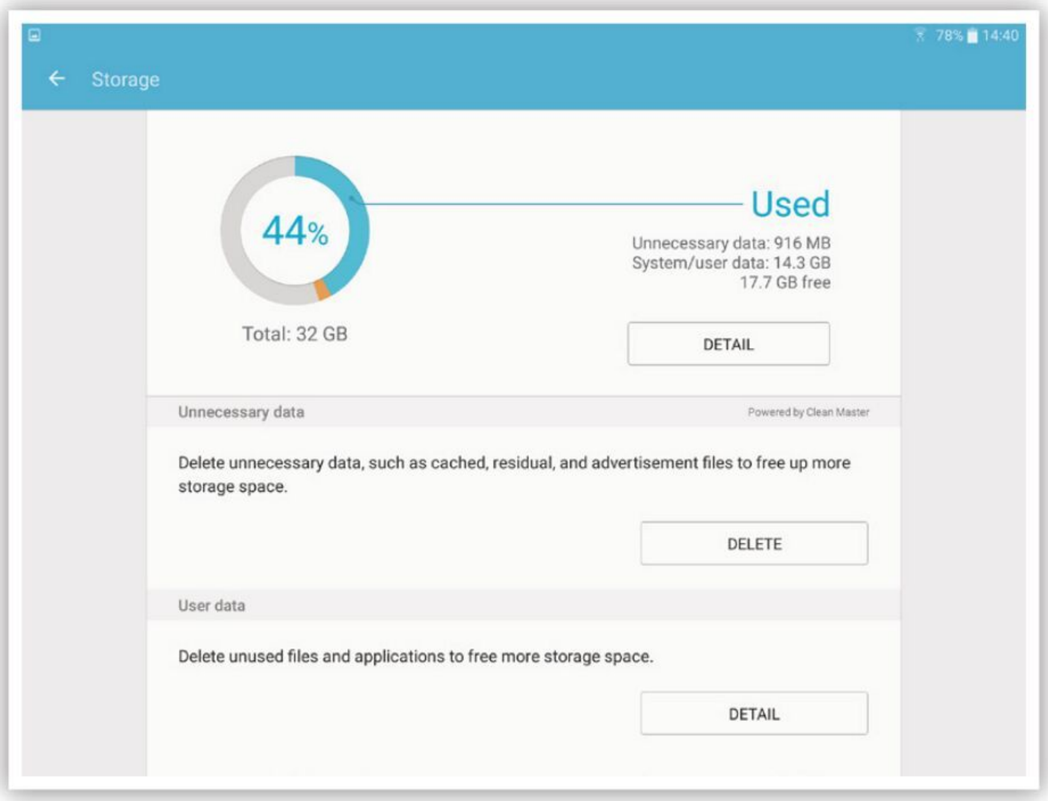


4 Tap the Battery section to see more details about battery usage. The top section of the next screen shows current battery percentage level on the left and estimated usage time remaining on the right. Estimated usage time remaining is based on an estimate and will be affected by heavy use.

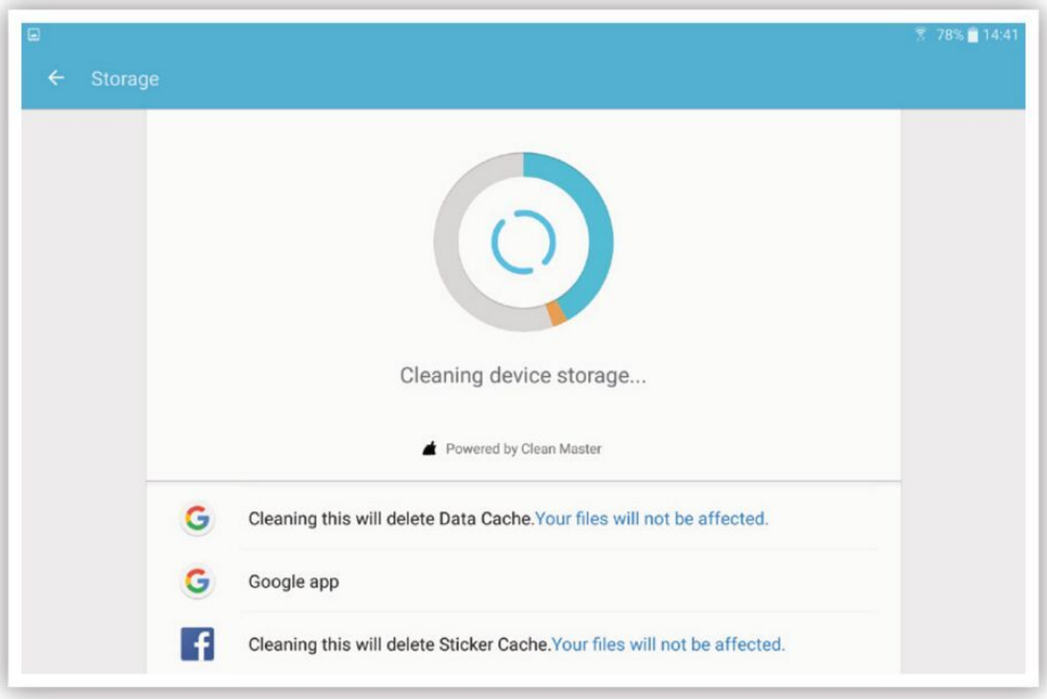
Clean Up with Smart Manager



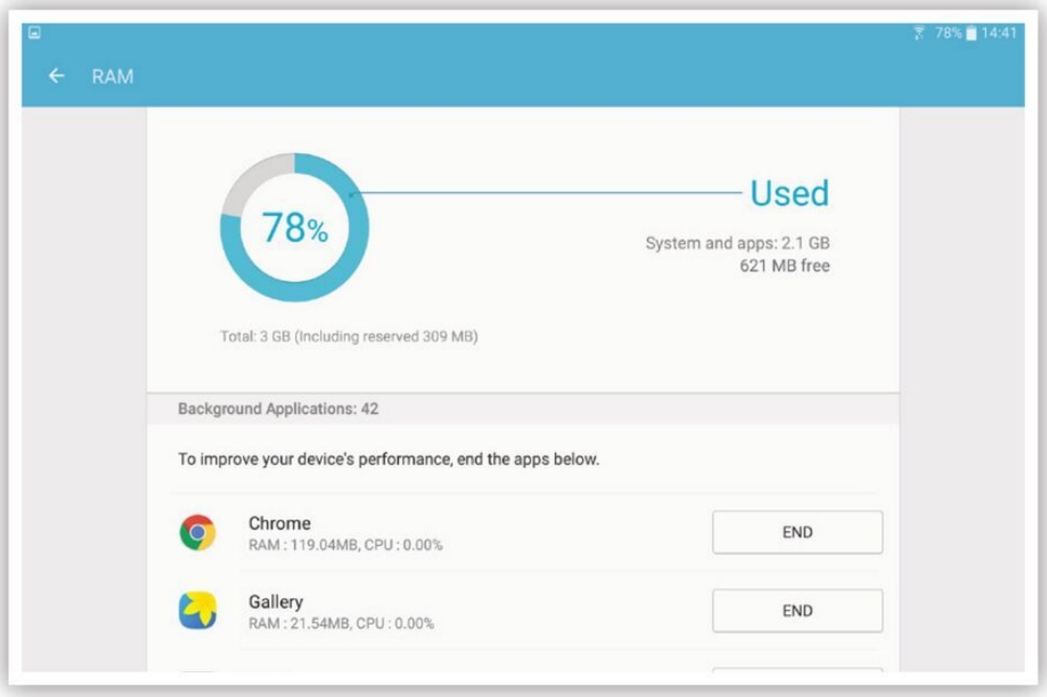
5 Tap the “Battery Usage” button to see even more detail, including which apps or services are draining power. On this second new screen you can even tap the battery users and see advice on how to reduce usage. Go back and if App Optimisation is switched on, the number being optimised is shown.



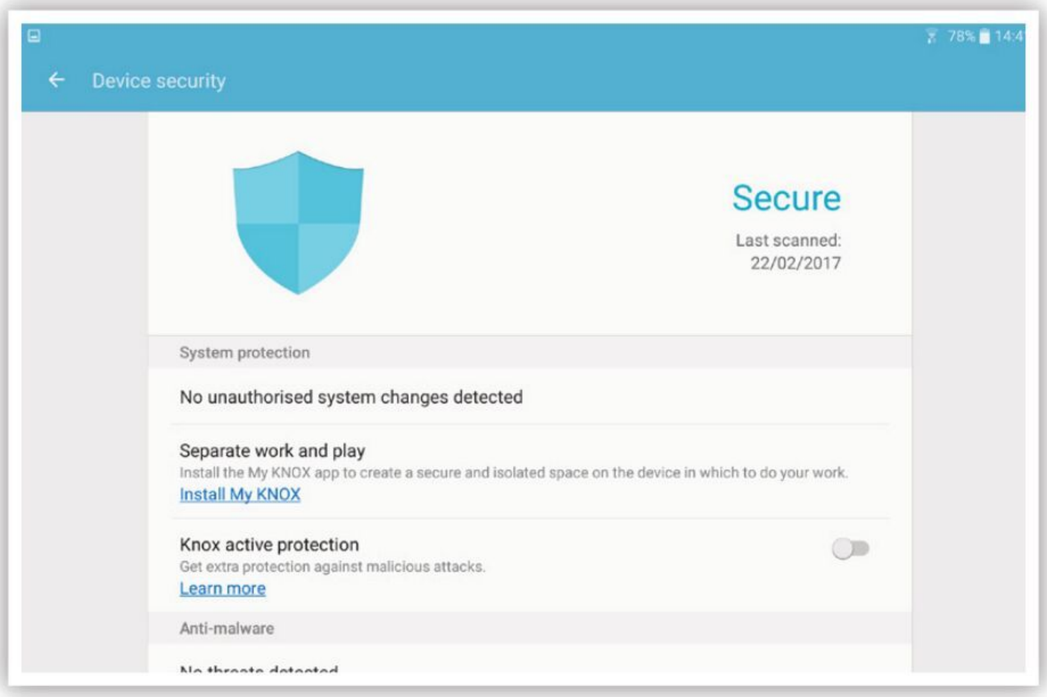
6 Go back to the main screen and tap the Storage section. The percentage readout will update to show the current amount of used and free internal storage. You can tap the “Detail” button and your storage will be shown as a bar graph, split into various categories including Available Space and System Memory.



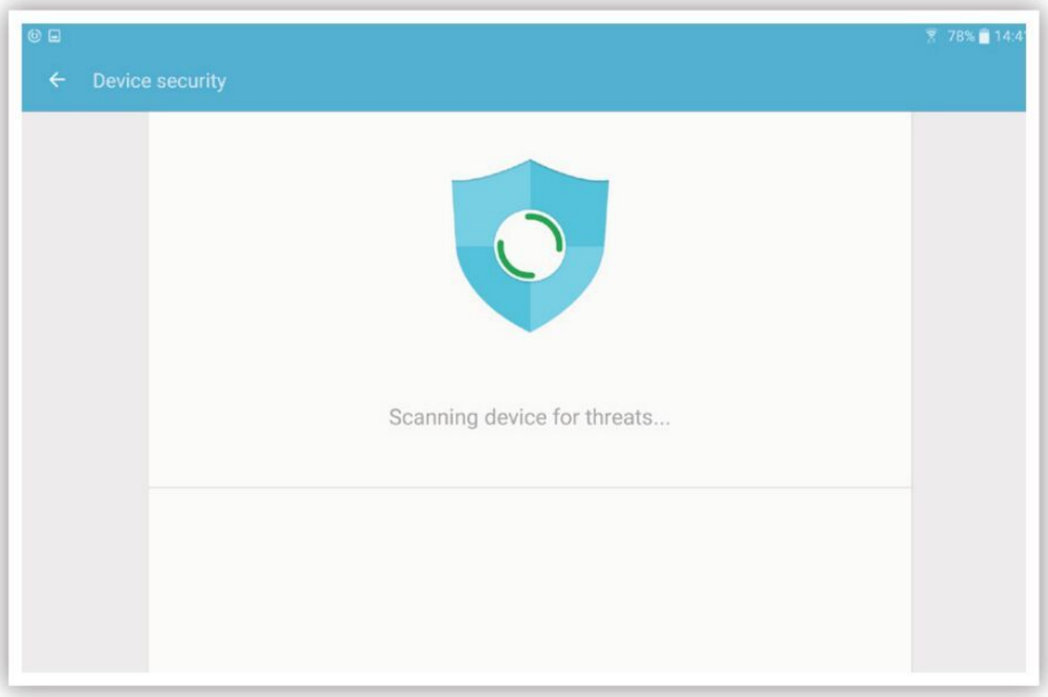
7 Go back to the Storage screen and you will see a “Delete” button. Tap this to quickly delete unnecessary data, including residual and advertising files. Depending on your device usage this could clean out several hundred MB of unwanted data and files. The full amount is shown when deleted.



8 Go back and tap the RAM section. You can see how much RAM (Random Access Memory) is being used at this moment. RAM is important to the smooth running of your device as it helps keep apps and services ready to use. Tap “End” next to any apps you don’t need running to free up RAM.



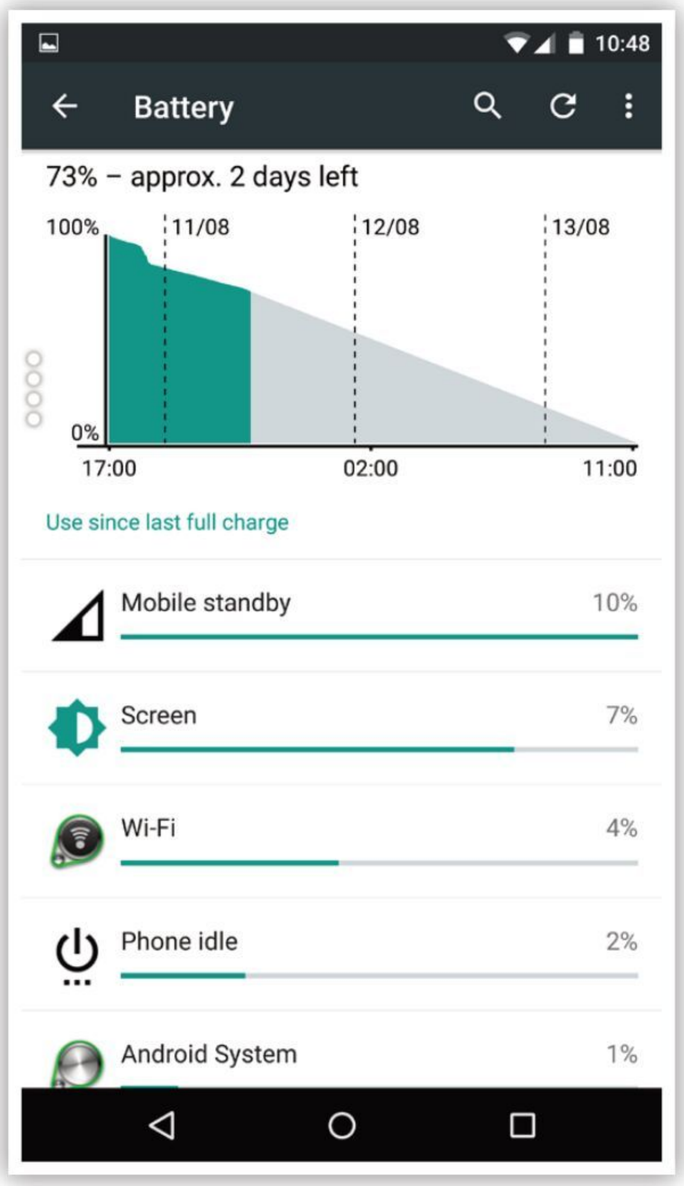
9 The First time you use Smart Manager, Device Security may not be activated. Tap the Security section and agree to the terms to activate it; you can also do this though Settings. Hopefully it will now show your device is “Secure”. You can scan the device for threats using the button at the bottom.

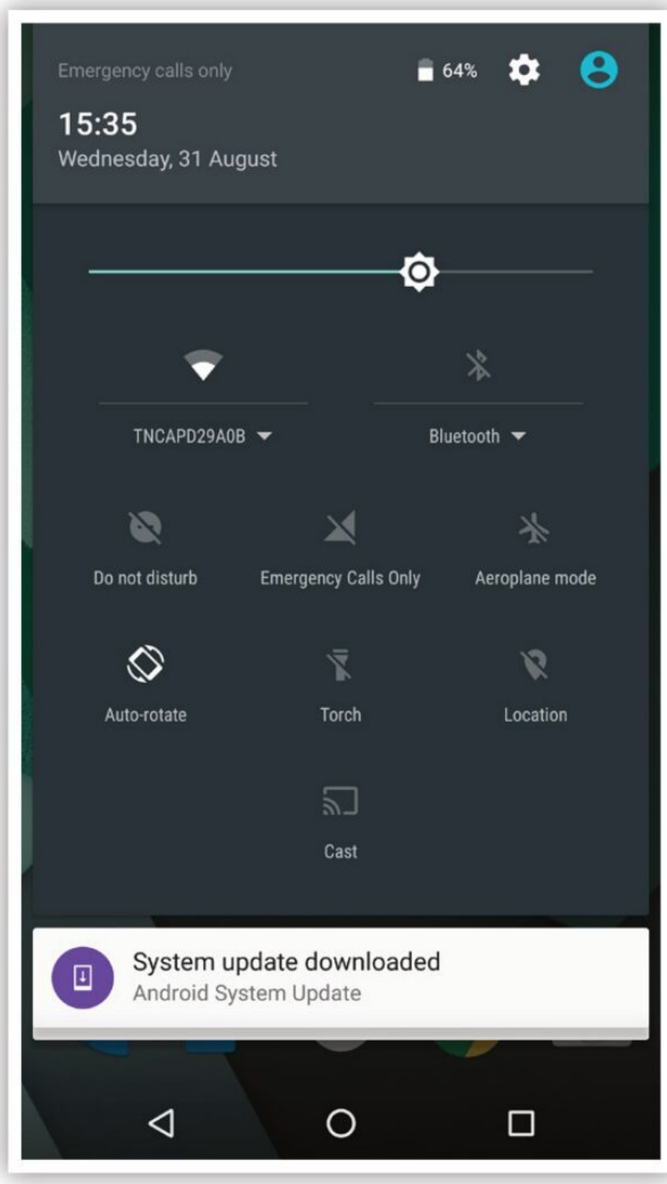


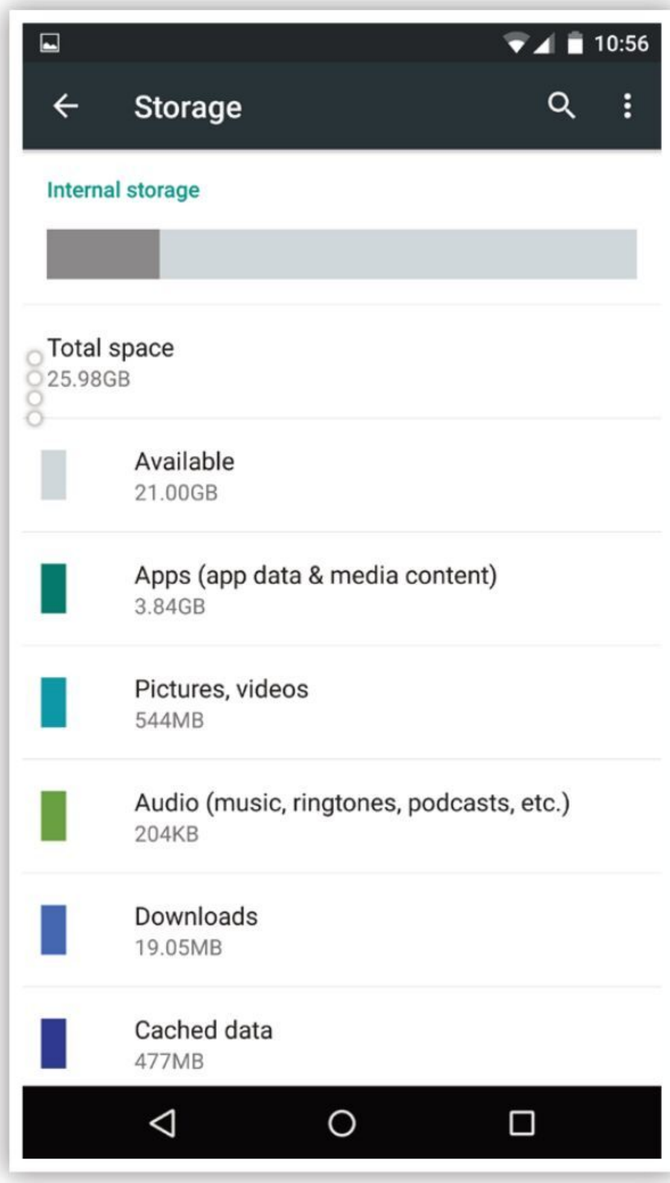
10 You can also activate Knox Active Protection for an extra layer of device security. Knox Active Protection, or KAP, uses both Real-time Kernel Protection (RKP) and DM Verity, a feature that provides integrity checking for system code and data, to protect your device data.

10 Common Problems Solved

Android has been blessedly free from any major problems for a long time, as the software continually improves and Google seems happy to listen to comments and suggestions from its massive user base. Where problems can still arise, however, is when the excellent software is not paired with excellent hardware. Let's take a look at some of the most common Android software and hardware problems, and ways they can be solved.







1. Battery Drain

The easiest way to quickly reduce battery drain is to switch off a few power hungry features such as GPS (location) and Bluetooth, reduce the screen brightness and restart your device. This should see an immediate improvement in battery life. Some devices also now include battery saver modes, allowing you to reduce functionality for a short term increase in battery life. These are, however, generally designed as emergency measures, not day to day solutions.

You can read more about way to save battery power elsewhere in this book, and the application of a few or even one of these measures should help. If you are still having problems lasting the day on a full charge, then consider buying a new battery (if your device allows battery replacement).

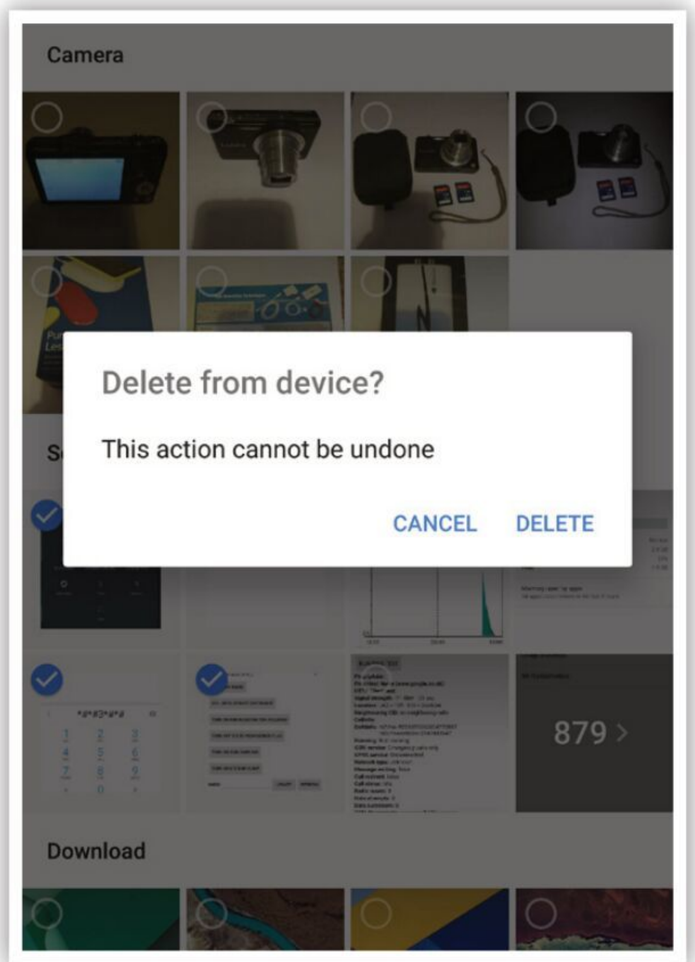
Lollipop offers users a detailed look at what is using the battery power on your device. Just look in Settings > Battery, and tap on each entry in the usage list to see possible fixes.

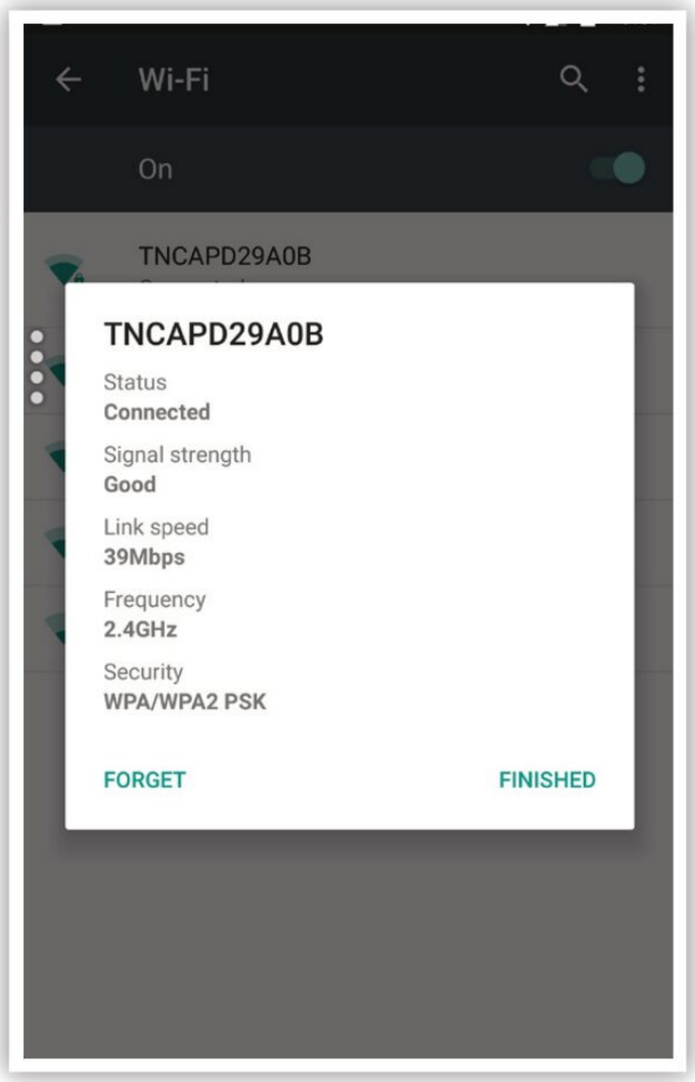
2. Lack of Storage

The easiest way to solve a lack of storage space on your phone or tablet is, obviously, to remove some old content such as apps, photos or videos. You can easily remove apps by going to Settings > Applications, selecting the app from the list and tapping the "Uninstall" button. You can also uninstall apps by tapping and holding on the icon in the main app drawer, and then dragging the app icon up to the uninstall icon that appears.

Photos and videos can be deleted from within the Gallery or Photos app, depending on your device. In both cases, tap and hold on the first image you want to delete, then select any others using the selection screen. Once you have all of the photos and videos selected that you want to delete, tap the Trash button or select “Delete”.

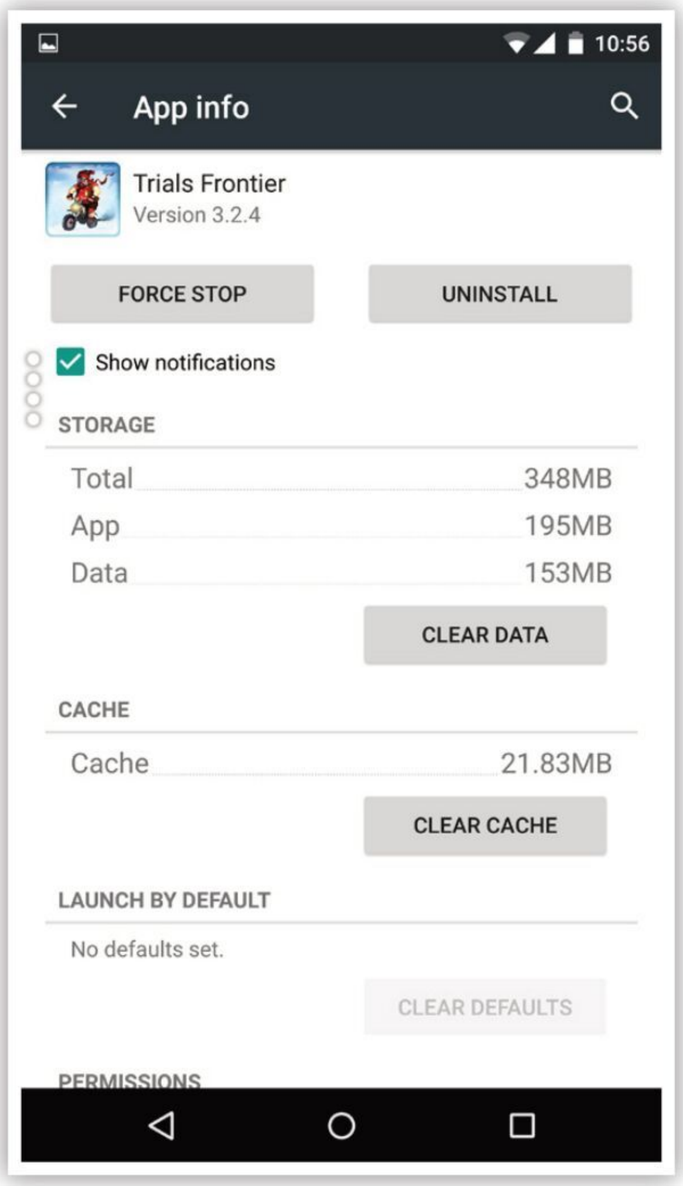
Some devices, particularly phones, will allow you to expand storage space by inserting a MicroSD card. There may already be a MicroSD installed in your device, but it is unlikely to the be the largest capacity the device can work with (check the manufacturer’s instructions or website for maximum MicroSD capacity). This fairly cheap option could double or even treble the available storage space on your device.

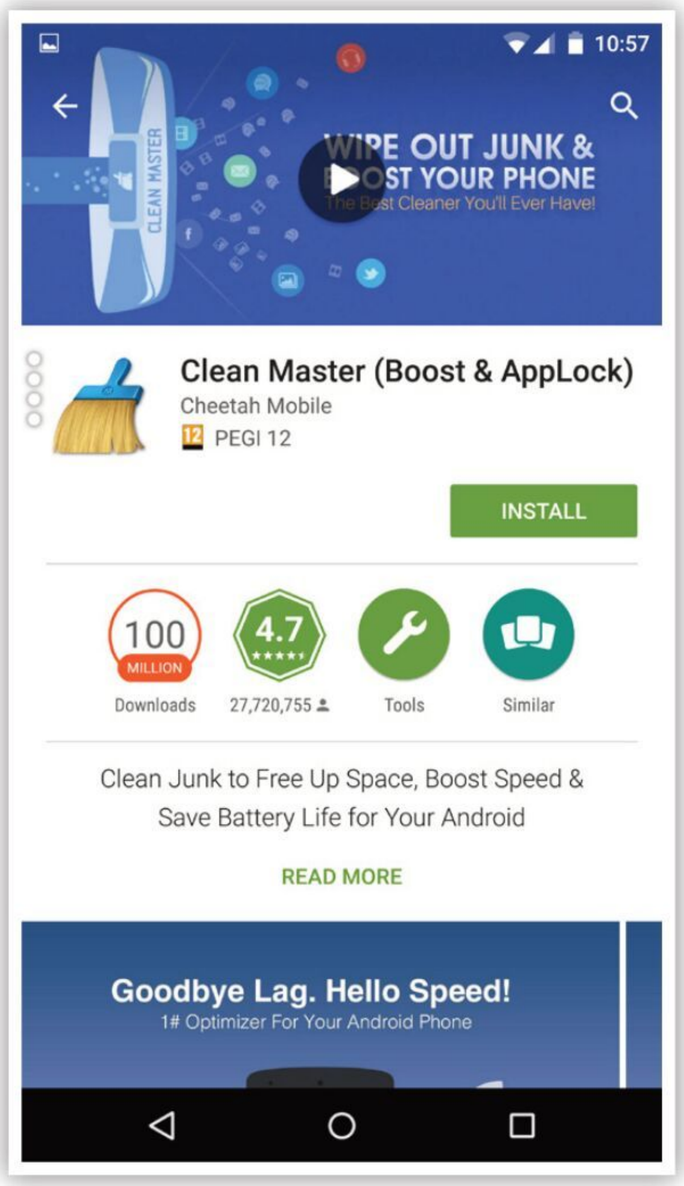




3. User Interface Lag

The main thing which will most likely be causing your phone to slow down and lag is a full or almost full internal storage drive. You can start fixing this by deleting unused apps and photos, or moving them to the cloud or a microSD card. Additionally, you should limit the use of live wallpapers and close open apps that you are no longer using. Another good thing to do is to delete app cache.





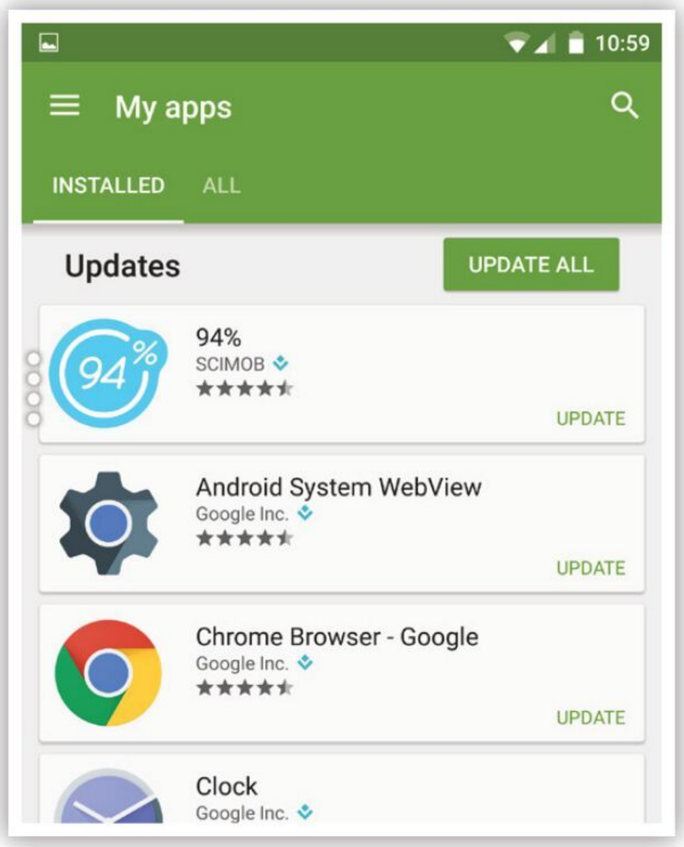
1. Any app’s cached data can be deleted be going to Settings, clicking on Apps, selecting an app from the main list, and then choosing the “Clear cache” option.

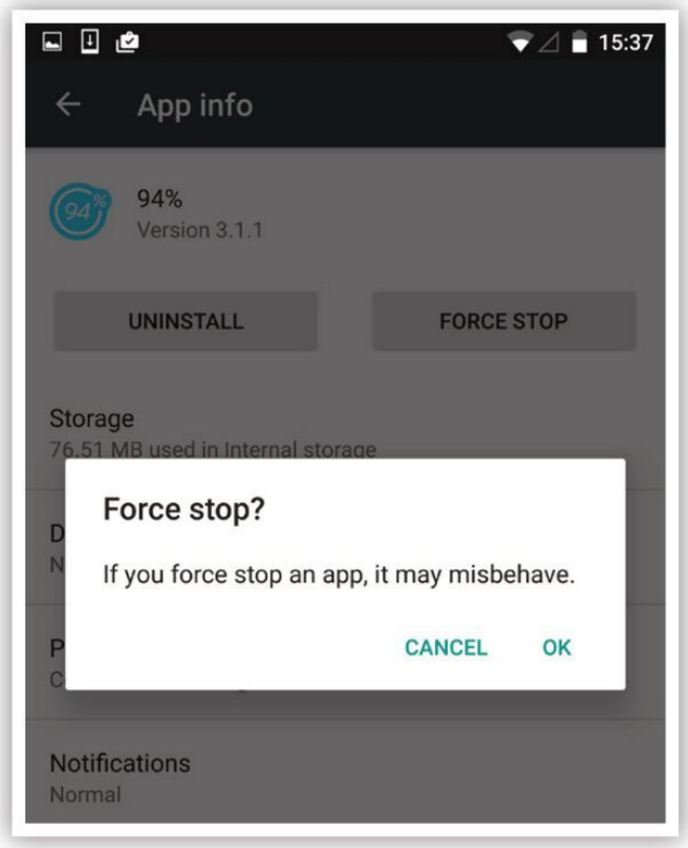
2. Programs such as App Cache Cleaner and Clean Master, both of which are available for free from the Google Play store, can also be used to automate the cache cleaning process.

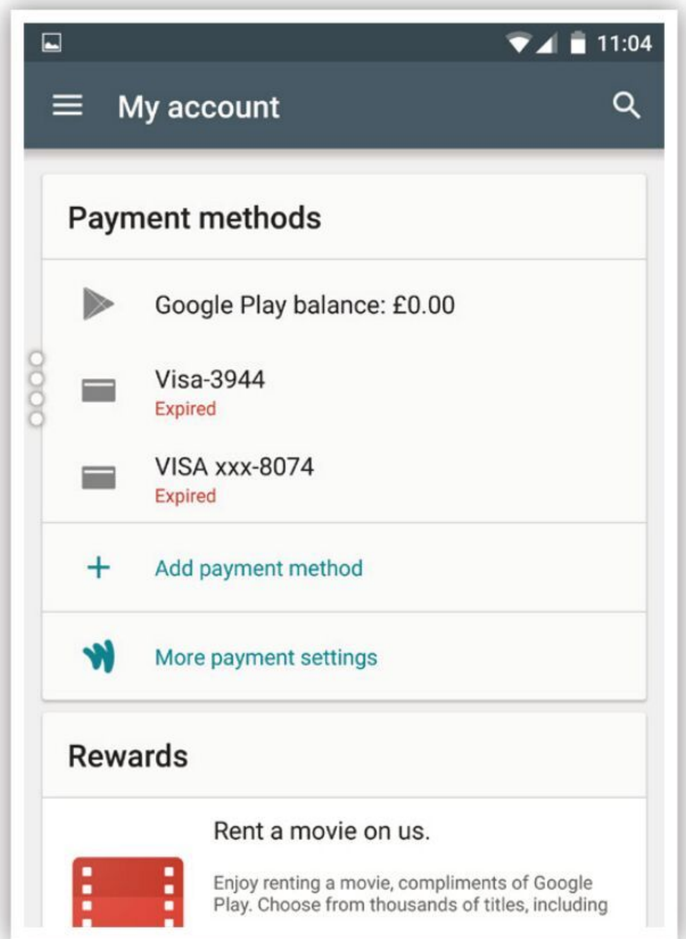
4. Wi-Fi Connection

Anytime your device needs to connect to an external device (such as a Wi-Fi router or Bluetooth peripheral), the chances of encountering problems is increased. If you are having problems with your Wi-Fi connection, the first step to take is to reboot the device that’s having trouble. You should also try rebooting the router it’s connected to if that hasn’t been restarted recently. Follow manufacturer instructions for rebooting your router. If that doesn’t work, make sure that the router’s firmware is up to date. This process will vary based on make and model, Instructions likely came in the router’s box though they can also be found online.

If those steps do not work, you need to look at the Android device Wi-Fi settings. Once there, force the device to forget the Wi-Fi network. Simply tap on the desired network and a menu will pop-up. Tap “Forget network”. Select that and then re-enter the password to connect again. If that doesn’t work, try changing the frequency in the Advanced menu. Go to Wi-Fi frequency band and play around with the different settings. It should be set to Automatic by default. If none of those fix the Android Wi-Fi problems, try updating applications or entering Safe Mode to try and single out problem apps. If that doesn’t work, it might be time to factory reset the device.





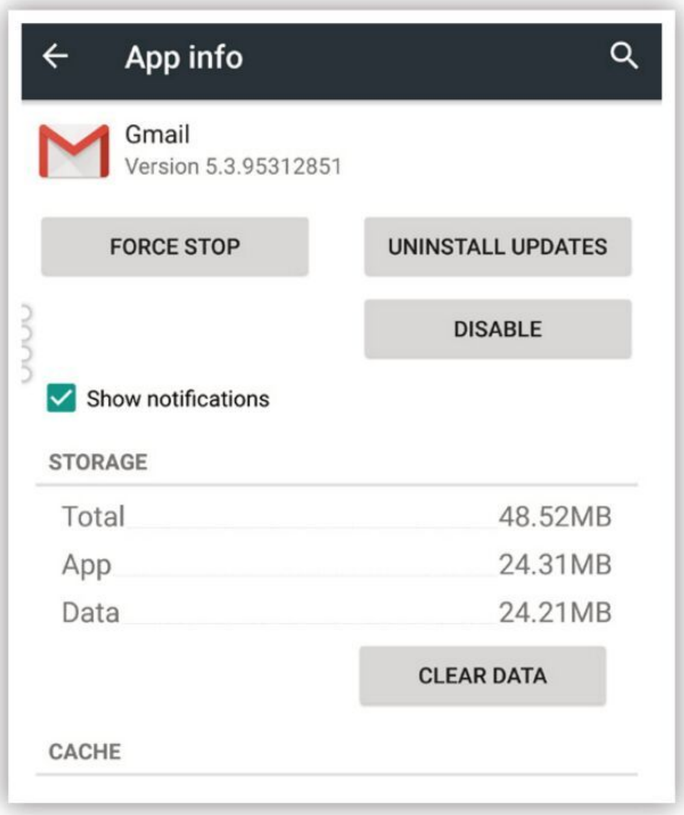


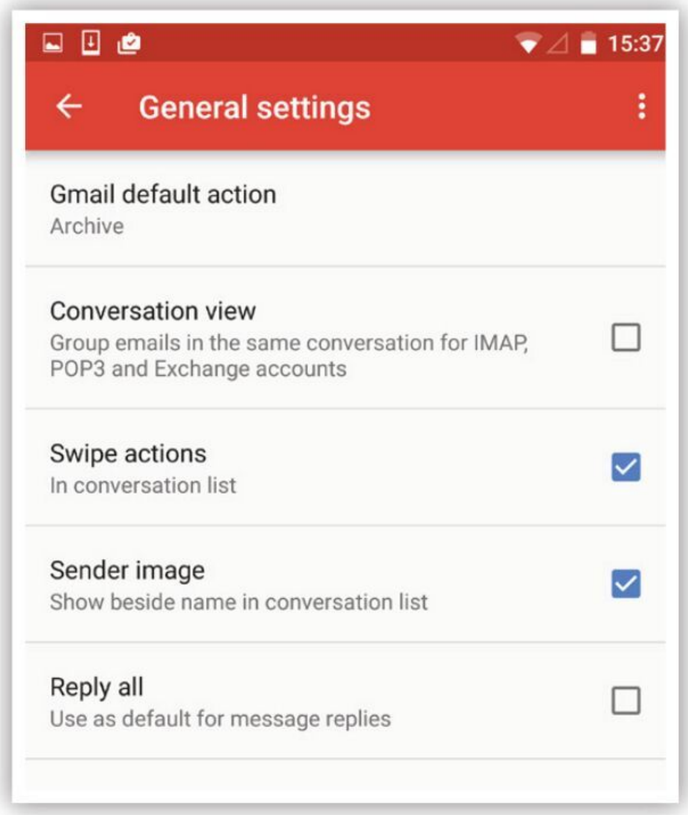
5. Apps Crashing

If apps are consistently crashing during operation, the first thing to do is to check for any available updates for those apps. You can do this by opening the Google Play Store app, tapping the Menu button and selecting “My apps”. Here you will see a list of all apps which have updates available, and be able to tap to update.

If there is no update available for the app that is crashing, it is worth either uninstalling the app and then reinstalling it. Alternatively, open the main settings, click “Applications” and find the problem app in the list. On the app info screen, clear both the app data and the app cache. Tap “Force Stop”. Now head back to the home screen or main app drawer and open the app to see if the crashes have stopped.

If the problem persists even after these steps, there may simply be a problem with the app (rather than a problem with your device). If you really want to dig deep, install a System Monitor app (System Monitor Lite is great for this) and see if the app is showing any resource spikes. If so, this could be causing the crashing, and indicates a problem with the software.





6. Sync Errors

If it seems that an app such as Gmail or Dropbox isn’t syncing properly, the first thing to do is to check that the app in question is working and fully up to date. You can check for updates for apps by opening the Google Play Store app, clicking “My Apps” in the menu and checking the update list. Apply any available updates and check to see if that fixes the sync problem.

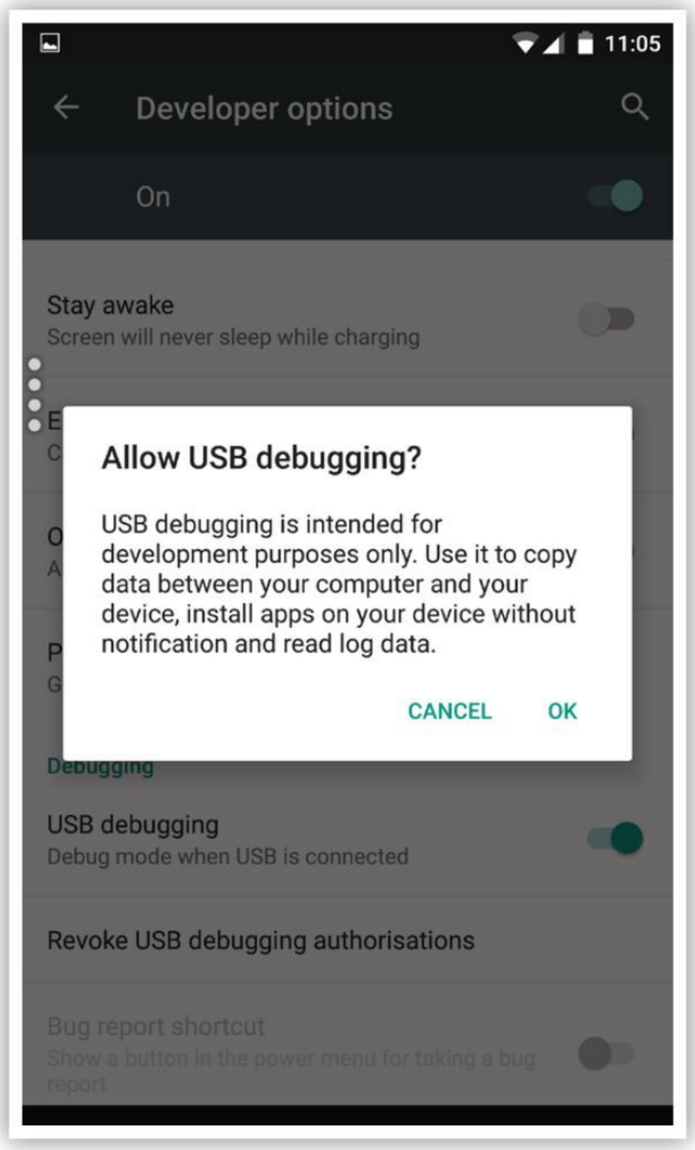
If not, you can try clearing the app cache and data. This will usually mean that you will have to sign in to the app again, but it should fix persistent sync problems. Open the apps in question and check that the individual sync settings are correct. You can also check sync settings for all of your Google apps, as well as things like Facebook and Instagram, in the Accounts section of the main settings.

7. Play Store Problems

Although it is thankfully fairly uncommon, some apps on the Play Store are only compatible with specific types of Android device. View the Play Store on your Android tablet and you will see a subtly different selection of apps compared to when you view the store on your Android phone. Generally, apps which aren’t compatible with your device won’t even be displayed. This is not the case when viewing the Play Store on a computer. Here you will see all apps, but will need to check the compatibility notice just below the Install button.

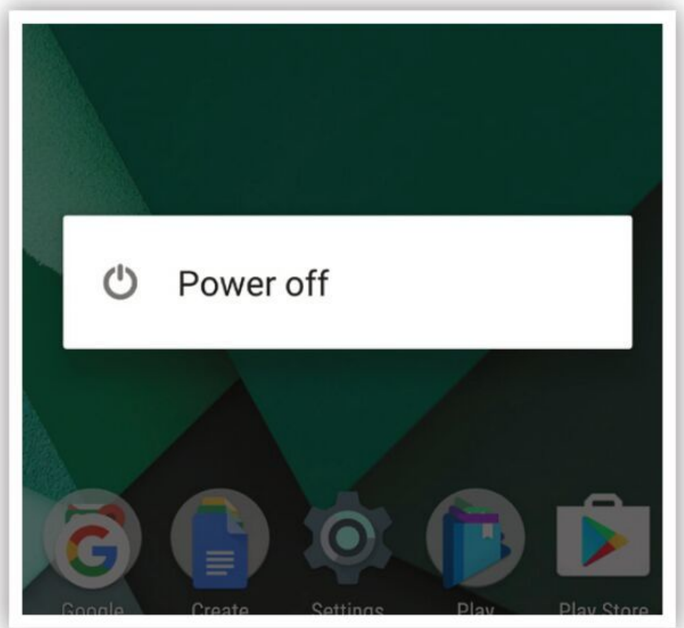
If you receive a “Download unsuccessful” message when attempting to download an app, try the following troubleshooting steps to resolve the issue:

- For paid applications, confirm your credit card information is up to date by signing in to your Google Wallet account.
- Clear the cache of the Google Play Store app(visit Settings > Applications > Clear cache).
- Restart your tablet, then try downloading the app again.
- Confirm there is connectivity to either a wireless or cellular network on your device, and contact your mobile service provider if you aren’t connected.
- Ensure there’s enough space on your tablet for the app to install.
- If none of the above steps work, try remounting your SD card, if your tablet has one. Tap Menu > Settings > Storage > Unmount SD card; then remount the SD card from the same menu by selecting Remount SD card, or restart the device if the remount option isn’t available.



8. PC Connection Fails

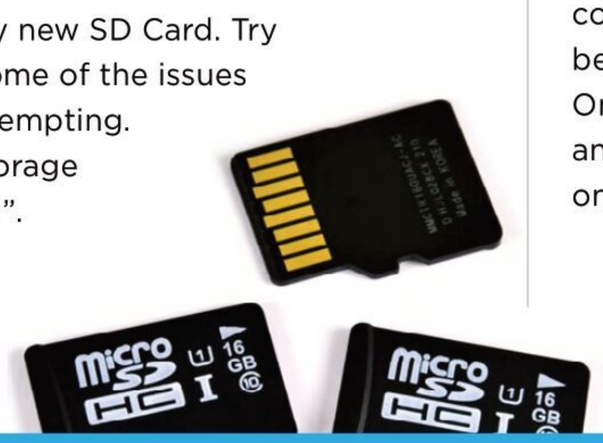
Even though Android devices are (in my opinion) almost trouble-free, some of you (in most cases users of Windows) report USB connection problems. there are a few different symptoms of Android USB connection problems. The most often problem is that you can't transfer files between your device and your computer or manage your device through your computer. If you are experiencing any problems connecting your Android device to your PC, these are the steps you should follow.



9. SD Card Unrecognised

This can potentially happen at any time, even with a fairly new SD Card. Try formatting the SD card from within Android. This solves some of the issues with SD cards, and if you haven't tried it yet, it is worth attempting.

To format an Android microSD card, go to Settings > Storage and scroll down to the bottom and select "Format SD card". Then select "Format SD card" again. If this fails, you will need to connect the SD card to a PC with a card reader. If your files aren't readable after connecting to a PC, you may have more luck using data recovery software.



Restart Your Device and PC

If you've been using your computer or Android phone for a long time without restarting, they may be simply overloaded. That's why the first thing to do is to restart your computer and then restart your Android phone.

Update Your Android Device

Sometimes there may be some bugs in the software and updating your Android version may indeed help. This is particularly true if you are using an older version of Android with a new version (8.1 or 10) of Windows.

Update Your PC

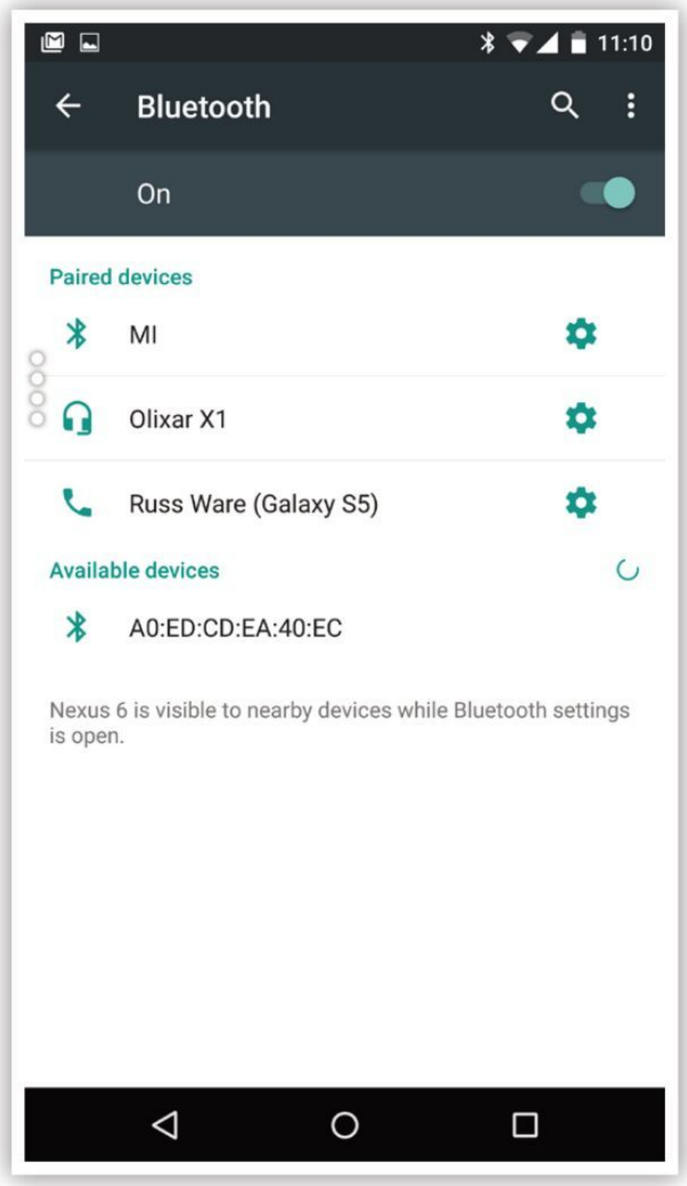
Sometimes outdated system (most often Windows) will not recognize any Android device (or any USB device). That's why it's always a good idea to update your system, particularly the USB drivers. Remember not to install too many updates at the same time (not more than two or three).

Try Debug Mode

This is the mode intended for developers. It allows you to directly access your phone, transfer and install apps without notification. To activate debug mode, go to Settings > Developer options > and check USB debugging. Plug in your device. If Developer options aren't unlocked on your device, open Settings > About Device and tap the "Build Number" heading 10 times.

New USB Cable

Android USB cables will undoubtedly become damaged or worn over time, so it is certainly worth trying to connect using a different cable if you have one available. If not, you can buy replacement Android USB cables online or in electrical stores for little money.



10. Bluetooth Connection

If you are dealing with Android 5.1.1 Bluetooth issues, first try switching the Bluetooth off and on. This is a simple fix but it is known to work for many users. After that, if the problem persists, try clearing the cache on Bluetooth Share. To do this, head into Settings > Apps > Scroll over to All > Select Bluetooth Share > Clear Cache. After doing this, power down the device and boot back up.

You can also try to Clear Data from the same screen. This will cause the Android device to forget all known Bluetooth devices, and allow you to essentially start scanning for them from scratch.

If none of the aforementioned fixes work, try booting into Safe Mode. To do this:

1. Ensure your device's screen is on, then press & hold the Power button.
2. Touch & hold the Power off option in the dialogue box.
3. Touch OK in the following dialogue to start safe mode.

Users trying to connect to Bluetooth in a car will need to consult the car's manual to reset the car's Bluetooth connection, as the process is going to be different for each make and model. Once that connection has been reset and the connection's been forgotten on the device, try reconnecting.

Congratulations, we have reached the end of your latest tech adventure. With help from our team of tech experts, you have been able to answer all your questions, grow in confidence and ultimately master any issues you had. You can now proudly proclaim that you are getting the absolute best from your latest choice from the ever changing world of consumer technology and software.

So what's next? Do you want to start a new hobby? Are you looking to upgrade to a new device? Or simply looking to learn a new skill? Whatever your plans we are here to help you. Just check our expansive range of For Beginners guidebooks and we are positive you will find what you are looking for. This adventure with us may have ended, but that's not to say that your journey is over. Every new hardware or software update brings its new features and challenges, and of course you already know we are here to help. So we will look forward to seeing you again soon.

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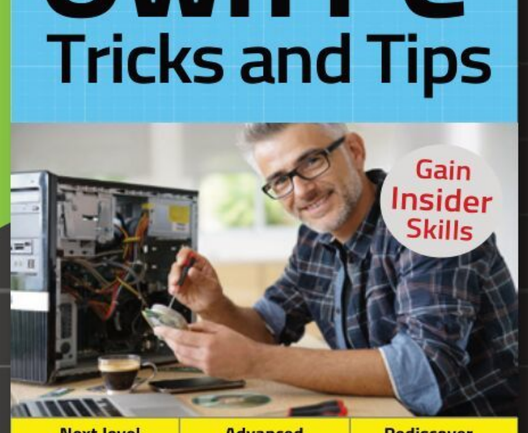

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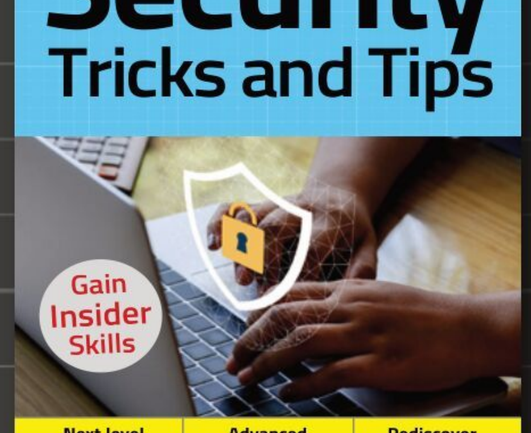

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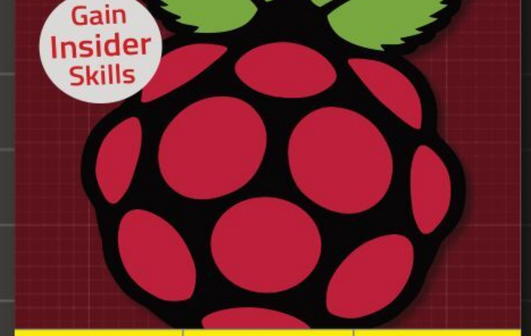

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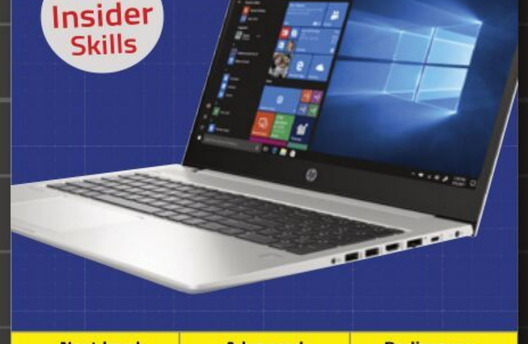

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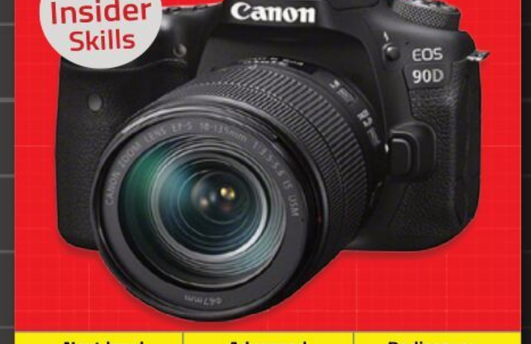

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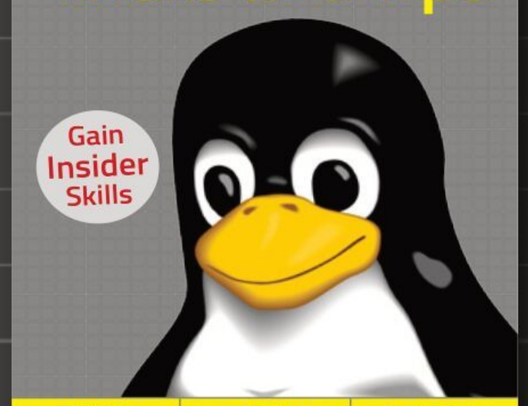

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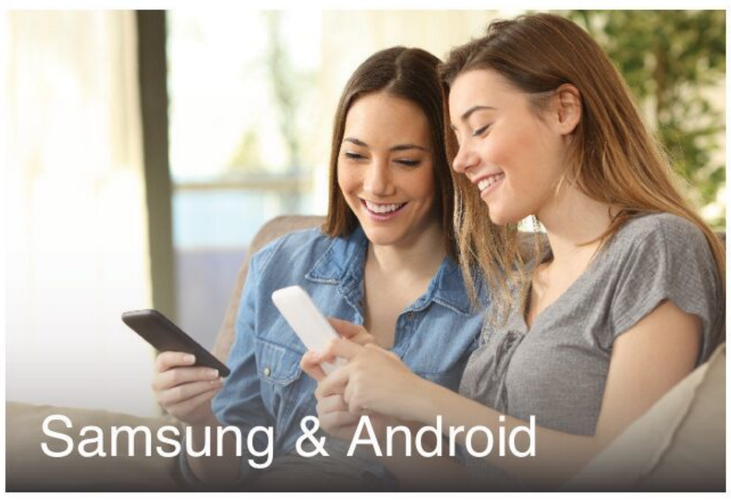

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